UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA
WESTERN DIVISION
No. 5:15-CR-62-H
No. 5:15-CR-67-H
No. 5:15-CR-68-H

UNITED STATES OF AMERICA	)	
	)	
v.	)	JOINT FACTUAL STATEMENT
	)	
DUKE ENERGY BUSINESS SERVICES LLC	)	
DUKE ENERGY CAROLINAS, LLC	)	
DUKE ENERGY PROGRESS, INC.	)	

I. INTRODUCTION

Defendants Duke Energy Business Services LLC ("DUKE ENERGY BUSINESS SERVICES"), Duke Energy Carolinas, LLC ("DUKE ENERGY CAROLINAS"), and Duke Energy Progress, Inc. ("DUKE ENERGY PROGRESS"),(collectively referred to as "Defendants") and the United States of America, by and through the United States Attorneys for the Eastern District of North Carolina, the Middle District of North Carolina and the Western District of North Carolina and the Environmental Crimes Section of the United States Department of Justice (collectively referred to herein as "the United States" or "the government"), hereby agree that this Joint Factual Statement is a true and accurate statement of the Defendants' criminal conduct and that it provides a sufficient basis for the Defendants' pleas of guilty to the following charging documents and the terms of the Plea Agreements:

United States v. Duke Energy Business Services, LLC, and Duke Energy Progress, Inc., No. 5:15-CR-62-H;

United States v. Duke Energy Business Services, LLC, Duke Energy Carolinas, LLC, and Duke Energy Progress, Inc., No. 5:15-CR-67-H; and

United States v. Duke Energy Business Services, LLC, Duke Energy Carolinas, LLC, and Duke Energy Progress, Inc., No. 5:15-CR-68-H.

The charges from the Middle District of North Carolina and the Western District of North Carolina have been transferred to the Eastern District of North Carolina for purposes of plea pursuant to Fed. R. Crim. P. 20. The Defendants' guilty pleas are to be entered pursuant to the Plea Agreements signed and dated this same day.

II. OVERVIEW AND BACKGROUND

Dan River Steam Station – Middle District of North Carolina

1. From at least January 1, 2012, DUKE ENERGY CAROLINAS and DUKE ENERGY BUSINESS SERVICES failed to properly maintain and inspect the two stormwater pipes underneath the primary coal ash basin at the Dan River Steam Station in Eden, North Carolina. On February 2, 2014, one of those pipes failed, resulting in the discharge of approximately 27 million gallons of coal ash wastewater and between 30,000 and 39,000 tons of coal ash into the Dan River. The coal ash travelled more than 62 miles downriver to the Kerr Lake Reservoir on the border of

North Carolina and Virginia. Video camera inspections of the other pipe, conducted in the aftermath of the spill, revealed that the other pipe had also deteriorated, allowing coal ash wastewater to leak into the pipe, and that DUKE ENERGY CAROLINAS and DUKE ENERGY BUSINESS SERVICES had not taken appropriate action to prevent unauthorized discharges from the pipe.

Cape Fear Steam Electric Plant -
Middle District of North Carolina

2. DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES also failed to maintain the riser structures in two of the coal ash basins at the Cape Fear Steam Electric Plant, resulting in the unauthorized discharges of leaking coal ash wastewater into the Cape Fear River.

Asheville, Riverbend, & Lee Steam Stations -
Eastern and Western Districts of North Carolina

3. Additionally, DUKE ENERGY CAROLINAS' and DUKE ENERGY PROGRESS's coal combustion facilities throughout North Carolina allowed unauthorized discharges of pollutants from coal ash basins via "seeps" into adjacent waters of the United States. Three of those facilities include the Asheville Steam Electric Generating Plant, the H.F. Lee Steam Electric Plant, and the Riverbend Steam Station. At those facilities, discharges from naturally occurring seeps were channeled by DUKE ENERGY CAROLINAS and DUKE ENERGY BUSINESS SERVICES to flow through

engineered drains and ditches into waters of the United States without obtaining or maintaining the necessary permits.

4. The Defendants' conduct violated the Federal Water Pollution Control Act (commonly referred to as the "Clean Water Act," or "CWA"). 33 U.S.C. §§ 1251 et seq. More specifically, the criminal investigation, conducted out of the Eastern District of North Carolina, revealed the following:

DEFENDANTS AND CORPORATE STRUCTURE

5. Duke Energy Corporation is an energy company headquartered in Charlotte, North Carolina.

6. Duke Energy Corporation is a holding company whose direct and indirect subsidiaries operate in the United States and Latin America. Duke Energy Corporation's wholly-owned subsidiaries include: DUKE ENERGY CAROLINAS; Progress Energy, Inc. ("Progress Energy"); DUKE ENERGY PROGRESS; and DUKE ENERGY BUSINESS SERVICES.

7. DUKE ENERGY CAROLINAS, a North Carolina limited liability company, is a regulated public utility primarily engaged in the generation, transmission, distribution and sale of electricity in portions of North Carolina and South Carolina.

8. Progress Energy, a North Carolina corporation headquartered in Raleigh, North Carolina, is a holding company which holds, among other entities, DUKE ENERGY PROGRESS.

9. DUKE ENERGY PROGRESS, a North Carolina corporation, is a regulated public utility primarily engaged in the generation, transmission, distribution and sale of electricity in portions of North Carolina and South Carolina. Prior to the July 2, 2012, merger between Duke Energy Corporation and Progress Energy, Inc., DUKE ENERGY PROGRESS was known as Carolina Power & Light, Inc., d/b/a Progress Energy Carolinas.

10. "Progress Energy Carolinas" will refer to DUKE ENERGY PROGRESS before the merger.

11. DUKE ENERGY BUSINESS SERVICES provides shared services to all of Duke Energy Corporation's operating utilities nationwide, including: Legal Counsel; Central Engineering & Services; Environmental, Health & Safety; Ethics and Compliance; and Coal Combustion Products.

12. During the time period relevant to the charges, within the State of North Carolina, the Defendants and/or their predecessors owned and operated the following facilities with coal ash basins:

FACILITY	OWNER/ OPERATOR	NUMBER OF COAL ASH BASINS	ADJACENT WATERS OF THE UNITED STATES	FEDERAL JUDICIAL DISTRICT
Allen Steam Station (Gaston County)	Duke Energy Carolinas	2	Lake Wylie & Catawba River	WDNC
Asheville Steam Electric Generating Plant (Buncombe County)	Duke Energy Progress	2	French Broad River	WDNC

Belews Creek Steam Station (Stokes County)	Duke Energy Carolinas	1	Belews Lake & Dan River	MDNC
Buck Steam Station (Rowan County)	Duke Energy Carolinas	3	Yadkin River & High Rock Lake	MDNC
Cape Fear Steam Electric Plant (Chatham County)	Duke Energy Progress	5	Cape Fear River	MDNC
Cliffside Steam Station (Rutherford & Cleveland Counties)	Duke Energy Carolinas	3	Broad River	WDNC
Dan River Steam Station (Rockingham County)	Duke Energy Carolinas	2	Dan River	MDNC
H.F. Lee Steam Electric Plant (Wayne County)	Duke Energy Progress	5	Neuse River	EDNC
L.V. Sutton Electric Plant (New Hanover County)	Duke Energy Progress	2	Cape Fear River & Sutton Lake[1]	EDNC
Marshall Steam Station (Catawba County)	Duke Energy Carolinas	1	Lake Norman	WDNC
Mayo Steam Electric Plant (Person County)	Duke Energy Progress	1	Mayo Lake	MDNC
Riverbend Steam Station (Gaston County)	Duke Energy Carolinas	2	Catawba River	WDNC
Roxboro Steam Electric Plant (Person County)	Duke Energy Progress	2	Hyco River	MDNC
Weatherspoon Steam Electric Plant (Robeson County)	Duke Energy Progress	1	Lumber River	EDNC

[1] While the parties agree that Sutton Lake receives wastewater from the L.V. Sutton Electric Plant, the status of Sutton Lake as a "water of the State" or "water of the United States" is part of ongoing federal civil litigation. See Cape Fear River Watch, Inc. v. Duke Energy Progress, Inc., 25 F.Supp.3d 798, 808-809 (2014). The Defendants do not concede that Sutton Lake is a jurisdictional water in this Joint Factual Statement.

COAL COMBUSTION PLANTS AND COAL ASH BASINS

13. Power plants that generate electricity through the combustion of coal create a number of waste byproducts. Among those waste byproducts are "coal combustion residuals" or "CCRs." CCRs include fly ash, bottom ash, coal slag, and flue gas desulfurized gypsum. Fly ash and bottom ash are both commonly referred to as "coal ash." Coal ash contains various heavy metals and potentially hazardous constituents, including arsenic, barium, cadmium, chromium, lead, manganese, mercury, nitrates, sulfates, selenium, and thallium. Coal ash has not been defined, itself, as a "hazardous substance" or "hazardous waste" under federal law, although some constituents of coal ash may be hazardous in sufficient quantities or concentrations.

14. Coal ash basins (also known as "coal ash ponds," "coal ash impoundments," or "ash dikes") may be part of the waste treatment system at coal-fired power plants. Historically, the Defendants' coal ash basins were unlined earthen impoundments and typically operated as follows: Coal ash was mixed with water to form slurry. The coal ash slurry was carried through sluice pipe lines to the coal ash basin. Settling occurred in the coal ash basin, in which particulate matter and free chemical components separated from the slurry and settled at the bottom of the basin. Less contaminated water remained at the surface of the basin, from which it could eventually be

discharged if authorized under relevant law and permits. In some instances, such as the Dan River Steam Station, water at the surface of the primary basin, flowed into a secondary basin, where further settling and treatment occurred before its discharge into a water of the United States.

15. Coal ash basins generally continued to store settled ash and particulate material for years or decades. From time to time, the Defendants dredged settled coal ash from the basins, storing the ash in dry stacks on plant property.

16. A total of approximately 108 million tons of coal ash are currently held in coal ash basins owned and operated by the Defendants in North Carolina. Duke Energy Corporation subsidiaries also operate facilities with coal ash basins in South Carolina (approximately 5.99 million tons of coal ash), Kentucky (approximately 1.5 million tons of coal ash), Indiana (approximately 35.6 million tons of coal ash), and Ohio (approximately 5.9 million tons of coal ash).

17. Each of the Defendants' facilities in North Carolina with coal ash basins sought and received permits to discharge treated coal ash wastewater through specified permitted outfalls into waters of the United States, including those listed in paragraph 12.

III. LEGAL AND REGULATORY BACKGROUND

CLEAN WATER ACT

18. The Clean Water Act is a federal law enacted to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a).

19. The Act prohibits the discharge of any pollutant into waters of the United States except in compliance with a permit issued pursuant to the CWA under the National Pollutant Discharge Elimination System ("NPDES") by the United States Environmental Protection Agency ("EPA") or by a state with an approved permit program. 33 U.S.C. §§ 1311(a) and 1342.

20. The Act defines "discharge of a pollutant" as "the addition of any pollutant to navigable waters from any point source." 33 U.S.C. § 1362(12). The term "pollutant" includes a wide range of materials, including solid waste and industrial waste. 33 U.S.C. § 1362(6). Coal ash and coal ash wastewater are pollutants.

21. A "point source" is a "confined and discrete conveyance, including . . . any pipe . . . from which pollutants are or may be discharged." 33 U.S.C. § 1362(14). Pipes and channelized ditches conveying stormwater or wastewater to surface waters are point sources.

22. "Navigable waters" are defined in the Act as "waters of the United States." 33 U.S.C. § 1362(7). "Waters of the United States" include rivers and streams "which would affect or could affect interstate or foreign commerce including any such waters . . . [w]hich are or could be used by interstate or foreign travelers for recreational or other purposes . . . [and the] [t]ributaries of [such] waters." 40 C.F.R. § 122.2. The following rivers are "waters of the United States": (1) Broad River; (2) French Broad River; (3) Cape Fear River; (4) Catawba River; (5) Dan River; (6) Yadkin-Pee Dee River; (7) Neuse River; (8) Lumber River; (9) Roanoke River; (10) Hyco River; (11) all tributaries of those rivers, including the South Fork of the Catawba River and Crutchfield Branch; and (12) all lakes and reservoirs exchanging water with those rivers, including, but not limited to, Belews Lake, Lake Norman, Mayo Lake, High Rock Lake, Sutton Lake,[2] and Kerr Reservoir.

23. Permits regulating discharges of pollutants (other than dredge and fill material) to waters of the United States are issued under the NPDES permit program. See 33 U.S.C. § 1342. Under the NPDES permit program, persons or entities who wish to discharge one or more pollutants must apply for an permit from the proper state or federal agency. See 40 C.F.R. § 122.21. A "permit" is "an authorization, license, or equivalent

[2] See note 1, supra.

control document issued by EPA or an 'approved State' to implement the requirements of [the CWA]." "Permit" does not include a "draft permit" or a "proposed permit" which has not yet been the subject of final agency action. 40 C.F.R. § 122.2 (emphasis added). Thus, an application for a permit does not provide the applicant with authority or permission to discharge under the Act.

24. States can seek approval from EPA to administer and enforce the CWA NPDES permit program. 33 U.S.C. § 1342(b). EPA's approval of a state program does not affect the United States' ability to enforce the Act's provisions. 33 U.S.C. § 1342(i).

25. On October 19, 1975, EPA approved the State of North Carolina's application to administer the NPDES Program. 40 Fed. Reg. 51493-05 (Nov. 5, 1975).

26. NPDES permits typically contain, among other things, effluent limitations; water quality standards; monitoring and reporting requirements; standard conditions applicable to all permits; and special conditions where appropriate. See 33 U.S.C. § 1342; 40 C.F.R. §§ 122.41-122.50.

27. All of DUKE ENERGY CAROLINAS' and DUKE ENERGY PROGRESS's facilities with coal ash basins in North Carolina are required to comply with the following Standard Conditions,

incorporated into their NPDES permit. See also 40 C.F.R. § 122.41.

a. The Permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit with a reasonable likelihood of adversely affecting human health or the environment. Standard Conditions, Section B(2) ("General Conditions").

b. The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Standard Conditions, Section C(2) ("Operation and Maintenance of Pollution Controls").

IV. FACTUAL BASIS FOR PLEA AND RELEVANT CONDUCT

DAN RIVER STEAM STATION

28. DUKE ENERGY CAROLINAS owns and operates the Dan River Steam Station ("DAN RIVER"), located on the Dan River in the Roanoke River Basin near Eden, North Carolina. DAN RIVER began operating in 1949 as a coal combustion plant. The coal combustion unit at DAN RIVER was retired in 2012. DUKE ENERGY CAROLINAS now operates a combined cycle natural gas facility to generate steam and electricity at DAN RIVER.

29. In 1956, the first coal ash basin at DAN RIVER was constructed to store existing and future coal ash. This basin is commonly referred to as the "Primary Ash Basin."

30. Two stormwater pipes run under the Primary Ash Basin: a 48-inch stormwater pipe and a 36-inch stormwater pipe. Both

were designed to carry stormwater from the site to the Dan River.

31. The 48-inch stormwater pipe predates the Primary Ash Basin. As installed in 1954, the 48-inch stormwater pipe was composed of galvanized corrugated metal pipe ("CMP").

32. From 1968 to 1969, the Primary Ash Basin was expanded over the original outfall of the 48-inch stormwater pipe. When the Primary Ash Basin was expanded, the 48-inch stormwater pipe was extended using reinforced concrete. After the expansion, the 48-inch stormwater pipe was a total of 1130 feet in length, of which approximately 786 feet was corrugated metal pipe and approximately 344 feet was reinforced concrete pipe ("RCP").

33. The 36-inch stormwater pipe is composed of reinforced concrete pipe that is approximately 600 feet in length.

34. Between 1976 and 1977, the expanded Primary Ash Basin was divided to form a second basin, commonly referred to as the "Secondary Ash Basin."

35. The Primary Ash Basin has a surface area of approximately 27 acres and a total storage capacity of approximately 477 acre-feet (or 155,431,132 gallons). The Secondary Ash Basin has a surface area of approximately 12 acres and a total storage capacity of approximately 187 acre-feet (or 60,934,277 gallons). In 2013, the basins contained a total of

approximately 1,150,000 cubic yards (or 232,270,130 gallons) of coal ash.

36. In a 2009 EPA Dam Safety Assessment, it was noted that the Primary and Secondary coal ash basins were:

> Classified as a significant hazard potential structure due to the environmental damage that would be caused by misoperation or failure of the structure.

DAN RIVER STEAM STATION NPDES PERMIT

37. On January 31, 2013, the State of North Carolina, through its Department of Environment and Natural Resources ("DENR") - Division of Water Resources ("DWR"), issued a new NDPES permit to DUKE ENERGY CAROLINAS. Effective March 2013, NPDES Permit NC0003468 ("the Dan River Permit"), and authorized the discharge of wastewater from specified outfalls at DAN RIVER.

38. The Dan River Permit required, among other things, that the facility meet the dam design and dam safety requirements set forth in North Carolina regulations at 15A NCAC 2K.

39. Pursuant to 15A NCAC 2K.0301, dams such as the Primary Ash Basin at DAN RIVER are subject to annual safety inspections by state authorities.

40. In 2006, DUKE ENERGY CAROLINAS, with the assistance of DUKE ENERGY BUSINESS SERVICES, applied for a NDPES stormwater permit for the 48-inch and the 36-inch pipes. As of February 2, 2014, DENR had not issued DUKE ENERGY CAROLINAS an individual or general NDPES stormwater permit for either the 48-inch or 36-inch pipe.

41. A NPDES stormwater permit is different than the NPDES permit issued for the discharge of wastewater from a treatment system. Stormwater permits generally do not allow the discharge of wastewater or particulates from coal ash basins or other industrial processes.

42. Neither the 48-inch nor the 36-inch stormwater pipe was a permitted outfall under the Dan River permit for wastewater. Neither DUKE ENERGY CAROLINAS nor any predecessor received authorization pursuant to the CWA and NPDES program to discharge wastewater from the coal ash basins or coal ash stored in those basins from either the 48-inch or 36-inch stormwater pipe under the Primary Coal Ash Basin at DAN RIVER.

1979 DOCUMENTED PROBLEMS WITH STORMWATER PIPES

43. In 1979, DUKE ENERGY CAROLINAS (at that time called Duke Power Company) inspected the 48-inch stormwater pipe through its Design Engineering and Station Support group. Although no major leaks were identified, engineers noted water

leaking into the pipe. Repairs to the 48-inch stormwater pipe were undertaken in response to this inspection.

44. Also in 1979, the Design Engineering and Station Support group inspected the 36-inch stormwater pipe. Twenty-two joints in the 36-inch pipe were noted for major leaks. DUKE ENERGY CAROLINAS/Duke Power Company employees recommended that the company repair the leaks or reroute the drain lines, noting that the discharges could be violations of EPA regulations. Repairs to the 36-inch stormwater pipe were undertaken in response to this inspection.

INSPECTIONS OF DAN RIVER COAL ASH BASINS AND DUKE ENERGY'S RESPONSE TO RECOMMENDATIONS

45. Pursuant to the requirements of North Carolina's dam safety laws, from 1981 through 2007, DUKE ENERGY CAROLINAS/Duke Power Company hired consultants to perform inspections of the coal ash basins at DAN RIVER every five years. The consultants generated reports containing their observations and recommendations that were provided to and reviewed by DUKE ENERGY CAROLINAS/Duke Power Company. In the same time period and pursuant to the same laws, DUKE ENERGY CAROLINAS/Duke Power Company performed its own annual inspections of the coal ash basins. DUKE ENERGY CAROLINAS/Duke Power Company also performed less-detailed monthly inspections of the coal ash basins.

46. In 1981, Engineering Firm #1 conducted the first of five independent inspections of DAN RIVER's ash basins. The report clearly identified the 48-inch pipe as part CMP/part RCP and the 36-inch pipe as RCP. **(See Appendix, Diagram 1).**

47. The 1981 report made the following recommendation, among others:

> The culverts which pass beneath the primary basin may become potential sources of problems, particularly as they age. As noted previously, there seemed to be more water leaving the 52/36-inch culvert than entering it. It is recommended that within the next several months the flow rate at each of the culverts be established, then checked at 6-month intervals thereafter. If there is a significantly greater flow of water leaving the pipes than entering them, the pipes should be inspected for leakage, as was done in 1979, and any needed repairs implemented.

48. The original schematic drawings in the 1981 report were maintained on site at DAN RIVER.

49. A 1984 Annual Inspection report prepared by DUKE ENERGY CAROLINAS/Duke Power Company recommended that "[f]low in the culverts beneath the primary basin should continue to be monitored at six month intervals" and that "[t]he corrugated metal pipe at the west end of the basin should be monitored in future inspections for further damage from seepage flow."

50. A 1985 Annual Inspection report prepared by DUKE ENERGY CAROLINAS/Duke Power Company clearly identified the 48-inch stormwater pipe as CMP. At least one of the engineers who participated in the 1985 annual inspection continues to work for

DUKE ENERGY BUSINESS SERVICES, although currently in a different capacity, and, in fact, conducted two inspections of the Primary and Secondary Ash Basins in 2008.

51. In 1986, Engineering Firm #1 conducted the "Second Five-Year Independent Consultant Inspection of the Ash Dikes" at DAN RIVER. The report clearly identified the 48-inch pipe as part CMP/part RCP and the 36-inch pipe as RCP. Employees of DUKE ENERGY CAROLINAS/Duke Power Company accompanied the consultant during field inspections.

52. The 1986 report repeated the recommendation noted in 1981:

> The monitoring program appears adequate, except it would be desirable to quantitatively (rather than qualitatively) monitor the inflow and outflow at the 52/36-inch diameter culvert, as recommended in the 1981 inspection report, to check for joint leakage. It would also be desirable to do quantitative monitoring of inflow and outflow of the 48-inch diameter culvert that also passes beneath the ash basin; part of this culvert is constructed of corrugated metal pipe which would be expected to have less longevity of satisfactory service than the reinforced concrete pipes.
>
> . . .
>
> It is recommended that quantitative monitoring of inflow and outflow be done at the culverts which pass under the ash basin to check for potential leakage. It is recommended that this monitoring be done at 6-month intervals. If there is a significant difference between inflow and outflow, or whenever there is some cause to suspect leakage, the inside of the culverts should be inspected for leakage.

53. In the 1986 Annual Inspection report, engineers for DUKE ENERGY CAROLINAS/Duke Power Company asked the DAN RIVER personnel to perform the following tasks:

> Quantitatively monitor the inflow and outflow at the two culverts that pass under the ash basin. Instructions are provided on the attached form and tables. Monitoring should begin within thirty days after the installation of V-notched weirs at the inlets and continue at six-month intervals. Random tests at various depths of flow should be made using a bucket and stop watch to verify flow rates given in the attached tables before beginning the monitoring schedule. Results of these tests should be transmitted to Design Engineering.

54. DUKE ENERGY CAROLINAS did not install V-notched weirs at the inlets. Flow monitoring, while apparently performed between 1991 and 1998, was not reported on the requested forms.

55. In 1991, Engineering Firm #2 performed the Third Five-Year Independent Consultant Inspection of the ash basins at DAN RIVER. The report noted that the two stormwater pipes passed under the Primary Ash Basin, but incorrectly identified the entire length of the 48-inch pipe as RCP. During the review process and prior to submission to the North Carolina Utilities Commission, engineers for DUKE ENERGY CAROLINAS/Duke Power Company did not correct the error. This erroneous description of the 48-inch stormwater pipe was repeated in the 1998, 2001 and 2007 Five-Year Independent Consultant Inspection reports produced by Engineering Firms #1 and #3 and not corrected by DUKE ENERGY CAROLINAS/Duke Power Company.

56. The 1991 report repeated the prior monitoring recommendations:

> As was previously recommended, the inflow and outflow of the drainage pipes extending under the ash basins should be monitored for the quantity flowing in versus that flowing out and the turbidity of the discharge. If a disparity becomes evident or if there is evidence of turbidity, the pipes should be checked for leaks.

57. The 1998 Fourth Independent Consultant Inspection report prepared by Engineering Firm #1 made the following recommendation for monitoring of the stormwater pipes:

> The outflow of the drainage pipes extending under the primary ash basins to the river should be monitored for turbidity of the discharge, which would be indicative of soil entrance into the pipes through leaks under the basin. The appearance of turbidity would make it advisable to perform a TV camera inspection of the pipe to help determine if the leak or leaks are a threat.

58. The recommendation in the 1998 report was repeated in identical language in the 2001 and 2007 Five-Year Inspection reports prepared by Engineering Firm #1 and #3, respectively.

59. In the 2007 Sixth Five-Year Independent Consultant Inspection report, Engineering Firm #3 noted that DUKE ENERGY CAROLINAS engineers had not performed annual inspections since 2001, and also had not performed monthly inspections in 2003. The firm expressed concern over the qualifications of the DUKE ENERGY CAROLINAS employees assigned to perform monitoring. Engineering Firm #3 recommended "that Duke reinstitute more

clearly defined engineering responsibility for the receiving and plotting of data from the dikes at the individual stations."

60. After 2008, DUKE ENERGY CAROLINAS installed a metal platform over rip rap (large rocks) along the outer wall of the coal ash basin to better enable employees to access the river bank near the outfalls of the 48-inch and 36-inch stormwater pipes. However, DUKE ENERGY CAROLINAS employees were still unable to view the 36-inch stormwater pipe outfall.

61. A 2009 EPA Dam Safety Assessment, prepared for EPA by an engineering contractor, restated the recommendations of the Sixth Five-Year Independent Consultant Inspection report and recommended that DUKE ENERGY CAROLINAS complete the implementation of those recommendations as described in the Sixth Five-Year Independent Consultant Inspection Report. Based on information received from DUKE ENERGY CAROLINAS, the EPA Dam Safety Assessment reported that "[v]isual monitoring of the outflow from the drainage pipes that go under the Primary Basin is performed on a monthly basis." EPA's contractor observed that during its field inspection in May 2009, the outflow from the 48-inch and 36-inch pipes was clear.

62. The last monthly inspection of the stormwater pipes occurred on January 31, 2014. The form created by DUKE ENERGY CAROLINAS for recording observations during the monthly inspections did not provide any specific space for reporting

observations of the stormwater pipes and the DUKE ENERGY CAROLINAS employee who performed the inspection did not independently record any observations of the pipes on the form for the January 31, 2014, inspection. According to the DUKE ENERGY CAROLINAS employee who performed the January 31, 2014, she did not observe turbidity in the water flowing from the 48-inch stormwater pipe. She could not see the discharge from the 36-inch stormwater pipe due to the location of the outfall in relation to her observation point on the scaffolding.

63. Between 1999 and 2008, and again from January 2013 through January 31, 2014, DUKE ENERGY CAROLINAS employees did not perform any visual inspections of the 36-inch stormwater pipe.

64. Between 1999 and 2008, during the months from May to September, DUKE ENERGY CAROLINAS employees were generally not able to conduct visual inspections of the flow from the 48-inch pipe because it was too difficult to access the end of the pipe from land as the result of vegetative growth and the presence of snakes.

65. Each of the DUKE ENERGY CAROLINAS employees responsible for monitoring the flow from the stormwater pipes from 1991 to December 2012 was aware that the 48-inch stormwater pipe was composed of corrugated metal.

ADDITIONAL DUKE ENERGY DOCUMENTATION THAT THE 48-INCH STORMWATER PIPE WAS CMP

66. On or about January 22, 2014, Engineering Firm #4 finished a draft document titled "Design Report - DRAFT Ash Basin Closure - Conceptual Design for Dan River Steam Station." Appendix 4 of the Report identifies the 48-inch stormwater pipe as "CMP," although that information was not separately stated in the body of the report. In preparing the report, Engineering Firm #4 engineers relied on documentation provided by DUKE ENERGY CAROLINAS and DUKE ENERGY BUSINESS SERVICES, including a 2008 schematic of the Primary Ash Basin that correctly identified the 48-inch stormwater pipe as CMP. Engineers with DUKE ENERGY BUSINESS SERVICES' Central Engineering office worked with Engineering Firm #4 in the preparation of the conceptual design and reviewed the draft documents but did not notice the labeling of the 48-inch stormwater pipe in Appendix 4.

67. A 2009 schematic entitled "Rough Grading - Overall Grading Plan for Dan River Combined Cycle" provided to DUKE ENERGY CAROLINAS by one of its contractors also identified the 48-inch stormwater pipe as CMP.

68. As of the date of the Dan River spill, record-keeping and information-sharing practices at DUKE ENERGY CAROLINAS and DUKE ENERGY BUSINESS SERVICES did not ensure that information such as the actual composition of the 48-inch pipe was

communicated from employees with knowledge to engineers and employees making budget decisions. Additionally, engineers in DUKE ENERGY BUSINESS SERVICES, with responsibility for DAN RIVER, had not sufficiently reviewed the records available to them and, therefore, continued to operate under the erroneous belief that the 48-inch pipe was made entirely of RCP.

RECOMMENDATION FOR CAMERA INSPECTIONS BY DUKE ENERGY PROGRAM ENGINEERING

69. From at least 2011 through February 2014, DUKE ENERGY BUSINESS SERVICES had a group of engineers assigned to support fossil impoundment and dam inspections. The group was known as "Program Engineering."

70. In May 2011, a Senior Program Engineer and a Program Engineer with responsibilities covering DAN RIVER, recommended that the budget for DAN RIVER include camera inspections of the pipes within the Primary and Secondary Ash Basins. The estimated total cost for the camera inspection of four pipes, including the 48-inch stormwater pipe, within the Primary and Secondary Coal Ash Basins was $20,000.

71. DUKE ENERGY CAROLINAS did not provide funding for the camera inspection.

72. Upon learning that the camera inspection was not funded, the DAN RIVER Station Manager called the Vice-President

of Transitional Plants and Merger Integration, who was in charge of approving the budget at DAN RIVER and other facilities. The Station Manager told the Vice-President that DAN RIVER needed the camera inspections, that the station did not know the conditions of the pipes, and that if one of the pipes failed, there would be environmental harm. The request was still denied.

73. In May 2012, the Senior Program Engineer and the Program Engineer again recommended that the budget for DAN RIVER include camera inspections of the 48-inch and 36-inch stormwater pipes underneath the Primary Ash Basin, along with two additional pipes within the Primary and Secondary Ash Basins. The estimated total costs for the camera inspection was $20,000. The reason noted on the budget request form was "internal recommendation due to age of piping system."

74. By e-mail dated May 30, 2012, the Senior Program Engineer indicated his intention to eliminate the camera survey budget line item for stormwater pipes at DAN RIVER in light of the anticipated closure of the basins.

75. In response to the Senior Program Engineer's May 30, 2012, email, the DAN RIVER Equipment Owner, employed by DUKE ENERGY BUSINESS SERVICES and responsible for monitoring the Primary Ash Basin wrote, in part:

> I would think with the basin closing you would want to do the camera survey. I don't think the drains have ever been checked and since they go under the basin I would like to ensure that we are eliminating any risk before closing the basins.

76. In response to the Senior Program Engineer's May 30, 2012, email, another DUKE ENERGY BUSINESS SERVICES employee advised:

> I don't know if this changes your opinion, but [it] isn't likely that the ash basin will close in 2013. We have to submit a plan to the state at least one year prior to closure and we haven't even begun to prepare that.

77. On a date unknown but sometime between May 2012 and July 2012, at an in-person meeting, a DUKE ENERGY BUSINESS SERVICES Program Engineer asked the Vice-President of Transitional Plants and Merger Integration whether camera inspections of the stormwater pipes would be funded. The Vice-President said no.

78. In June 2012, preliminary engineering plans for closing the DAN RIVER coal ash basins called for the removal of both the 48-inch and 36-inch pipes. However, between 2012 and 2014, there was no set date for closing and no formal closure plan had been submitted to DENR. In December 2012, the DAN RIVER ash basin closure was not projected to be completed until 2016.

79. DUKE ENERGY CAROLINAS did not provide funding for the camera inspections of the stormwater pipes and no camera

inspections were performed prior to February 2, 2014. If a camera inspection had been performed as requested, the interior corrosion of the elbow joint in the 48-inch pipe would likely have been visible.

80. From at least January 1, 2012, through February 2, 2014, DUKE ENERGY CAROLINAS and DUKE ENERGY BUSINESS SERVICES failed to take reasonable steps to minimize or prevent discharge of coal ash to the Dan River that would adversely affect the environment and failed to properly operate and maintain the DAN RIVER coal ash basins and the related stormwater pipes located beneath the Primary Coal Ash Basin, thus, negligently violating the DAN RIVER NPDES permit.

FEBRUARY 2014 DISCHARGES INTO THE DAN RIVER

81. On February 2, 2014, a five-foot long elbow joint within the sixty-year-old corrugated metal section of the 48-inch pipe under the Primary Ash Basin at DAN RIVER failed, resulting in the release of coal ash wastewater and coal ash into the Dan River.

82. Later inspection of the elbow joint, after its retrieval from the Dan River, revealed extensive corrosion of the metal of the elbow joint initiating at the bottom center of the elbow. The parties disagree about some of the factors that contributed to the extensive corrosion. Nevertheless, the age of the pipe was at or beyond the reasonably expected serviceable

life for CMP under similar conditions. Ultimately, the combination of the corrosion and the weight of the coal ash basin over the elbow joint caused it to buckle, fail, and be pushed through the end of the 48-inch stormwater pipe into the Dan River.

83. Between approximately 1:30 p.m. and approximately 2:00 p.m. on February 2, 2014, a security guard at DAN RIVER noticed that the level of the wastewater in the Primary Ash Basin had dropped significantly.

84. The security guard immediately notified DUKE ENERGY CAROLINAS employees in the control room for the adjacent natural gas-powered combined cycle plant. The DUKE ENERGY CAROLINAS Shift Supervisor on duty went to the Primary Ash Basin and observed a large sinkhole. The Shift Supervisor saw only residual water and mud left in the basin. The Shift Supervisor alerted other DUKE ENERGY CAROLINAS and DUKE ENERGY BUSINESS SERVICES employees in order to begin response efforts.

85. After the initial discovery of the sinkhole in the Primary Ash Basin on February 2, 2014, an employee who responded to the site circulated photographs of the Primary Ash Basin to other DUKE ENERGY CAROLINAS and DUKE ENERGY BUSINESS SERVICES employees via e-mail at approximately 3:49 p.m.

86. Photographs attached to the 3:49 p.m. e-mail reflected the status of the basin. **(See Appendix, Photographs 1 - 4).**

87. From on or about February 2, 2014, through February 8, 2014, the unpermitted discharge of approximately 27 million gallons of coal ash wastewater and between 30,000 and 39,000 tons of coal ash into the Dan River occurred through the 48-inch pipe from the Primary Coal Ash Basin.

88. According to the U.S. Fish and Wildlife Service, coal ash from the release traveled more than 62 miles down the Dan River, from the Middle District of North Carolina, through the Western District of Virginia, and into the John H. Kerr Reservoir in the Eastern District of North Carolina and Eastern District of Virginia.

89. On or about February 8, 2014, DUKE ENERGY CAROLINAS sealed the outfall of the 48-inch pipe, halting the discharge of coal ash wastewater and coal ash into the Dan River.

DISCHARGES FROM THE 36-INCH STORMWATER PIPE

90. On February 6, 2014, an interior video inspection of the 36-inch stormwater pipe revealed: (1) infiltration of wastewater occurring through a number of joints; (2) water jets from pressurized infiltration at three joints; (3) separation in one joint near the outfall point; (4) cracks running lengthwise through several pipe segments; and (5) sections of ponding water indicating irregular vertical alignment.

91. Analysis of water samples from the 36-inch pipe revealed that the line was releasing wastewater that contained

elevated levels of arsenic. On February 14, 2014, the arsenic concentration in the effluent at the outfall of the 36-inch pipe was 140 ug/L. On February 17, 2014, the arsenic concentration in the effluent at the same point was 180 ug/L. The North Carolina water quality standard for the protection of human health for arsenic is 10 ug/L and the water quality standard for the protection of freshwater aquatic life is 50 ug/L.

92. Discharge of contaminated wastewater continued from the 36-inch pipe between February 6, 2014, and February 21, 2014. The nature of the wastewater infiltration into the 36-inch stormwater pipe and DUKE ENERGY CAROLINAS employees' visual and auditory confirmation of flow from the 36-inch pipe indicates that discharge from the 36-inch pipe began a significant period of time before February 6, 2014. The discharge began at least as early as January 1, 2012, continued until February 21, 2014, and was not authorized by a NPDES permit.

93. On February 21, 2014, DUKE ENERGY CAROLINAS sealed the 36-inch stormwater pipe.

RESPONSE COSTS FOR DAN RIVER RELEASE

94. Thus far, DUKE ENERGY CAROLINAS and federal, state, and local governments have spent over $19 million responding to the spill.

95. Drinking water intakes in the Dan River watershed, including those for the Cities of Danville, Virginia Beach, and Chesapeake and for the Halifax County Service Authority in Virginia were temporarily closed and were required to undertake additional monitoring for contamination. Monitoring results indicated that the water treatment plants along the Dan River were able to adequately treat and remove the coal ash and related contaminants from the spill.

96. The North Carolina Department of Health and Human Services issued an advisory against consuming fish from or recreational contact with the Dan River from the point of the spill to the North Carolina - Virginia border from February 12, 2014, to July 22, 2014.

97. DUKE ENERGY CAROLINAS has reimbursed many entities for their expenditures in the aftermath of the spill. Nonetheless, at least two localities and one federal agency have not yet been fully reimbursed. Those entities and their expenditures are: (1) Virginia Beach, $63,309.45; (2) Chesapeake, Virginia, $125,069.75; and (3) the United States Army Corps of Engineers, $31,491.11.

CAPE FEAR STEAM ELECTRIC PLANT

98. DUKE ENERGY PROGRESS (formerly "Progress Energy Carolinas") owns the Cape Fear Steam Electric Plant ("CAPE

FEAR"), located adjacent to the Cape Fear River, just south of the confluence of the Haw and Deep Rivers and approximately two miles southeast of Moncure, North Carolina.

99. CAPE FEAR has a total of five coal ash basins. Three of the basins, constructed in 1956, 1963, and 1970 have been inactive for many years. Two of the basins, constructed in 1978 and 1985 continued to receive coal ash slurry and other forms of wastewater through at least November 2011.

100. The 1978 ash basin had a storage capacity of 880 acre-feet (approximately 286,749,258 gallons), a surface area of 43 acres, and a maximum structural height of 27 feet. The 1978 ash basin included a "riser," also known as a "stand pipe," used under normal operation to allow the passive and permitted discharge of wastewater treated by settlement from the basin. The riser was constructed of vertically stacked 18-inch diameter concrete pipe sections.

101. The 1985 ash basin had a storage capacity of 1764 acre-feet (approximately 574,801,921 gallons), a surface area of 65 acres, and a maximum structural height of 28 feet. The 1985 ash basin included a riser constructed of vertically stacked 48-inch diameter concrete pipe sections.

102. In a 2009 EPA Dam Safety Assessment, both the 1978 and 1985 coal ash basins at CAPE FEAR were classified as having "significant hazard potential," as previously defined.

103. By December 2011, DUKE ENERGY PROGRESS/Progress Energy Carolinas ceased electric power generation at CAPE FEAR. As a result of the cessation of operation, coal ash slurry was no longer received by the 1978 or 1985 coal ash basin, although each basin continued to receive rainwater or stormwater.

INSPECTIONS OF CAPE FEAR ASH BASINS, MONITORING RECOMMENDATIONS, AND DETECTION OF LEAKING RISERS

104. DUKE ENERGY PROGRESS/Progress Energy Carolinas engaged outside firms to perform annual and five-year inspections of the coal ash basins at CAPE FEAR, as required by state law.

105. On or about May 1, 2008, Engineering Firm #3, hired by DUKE ENERGY PROGRESS/Progress Energy Carolinas, conducted an annual inspection of the CAPE FEAR coal ash basins and generated a report of its observations, conclusions, and recommendations. The report was submitted to DUKE ENERGY PROGRESS/Progress Energy Carolinas and reviewed by the plant manager and environmental coordinator for CAPE FEAR.

106. The 2008 annual inspection report described the condition of the risers in the 1978 and 1985 coal ash basins as "marginal" and estimated that the risers were "likely to develop problems" in two to five years from the date of the report. The report further recommended that DUKE ENERGY PROGRESS/Progress Energy Carolinas perform its own inspections of the risers in

the 1978 and 1985 ash basins by boat, in order to better assess the condition of the risers.

107. The recommendation to inspect the risers using a boat was repeated in annual reports produced by engineering firms and submitted to DUKE ENERGY PROGRESS/Progress Energy Carolinas in 2009 and 2010, and to DUKE ENERGY PROGRESS in 2012 and 2013.

108. At no time from May 1, 2008, until March 2014 did DUKE ENERGY PROGRESS/Progress Energy Carolinas perform inspections of the risers in the 1978 or 1985 ash basins by boat.

109. At some time during the summer of 2011, but on a date unknown, the DUKE ENERGY PROGRESS/Progress Energy Carolinas Environmental Coordinator and the NPDES Subject Matter Expert responsible for CAPE FEAR visited the site. During their visit, they became aware that the risers in the 1978 and 1985 coal ash basins were leaking. During the fall of 2011, but on a date unknown, they informed DUKE ENERGY PROGRESS/Progress Energy Carolinas management that repairs were needed on the risers. No additional inspection or monitoring of the risers was undertaken by DUKE ENERGY PROGRESS/Progress Energy Carolinas as a result of their observations prior to March 2014.

110. The 2012 Five-Year Independent Consultant Report, produced on January 26, 2012, by Engineering Firm #4, noted that the skimmer located at the top of the riser in the 1978 ash basin was corroded and tilted. The skimmer was designed to

prevent debris from being discharged from the basin or clogging the riser.

111. Photographs included with the 2012 Five-Year Independent Consultant Report show the skimmer on the riser in the 1978 coal ash basin sitting askew. **(See Appendix, Photographs 5 & 6).**

112. Photographs included with the 2012 Five-Year Independent Consultant Report show the skimmer on the riser in the 1985 coal ash basin. **(See Appendix, Photograph 7).**

113. Annual inspection reports for 2012 and 2013 also reported that the riser in the 1978 ash basin was damaged, deteriorated, and tilted. The annual reports recommended that DUKE ENERGY PROGRESS/Progress Energy Carolinas replace or repair the skimmer on the riser in the 1978 ash basin.

114. At no time from January 26, 2012, through March 2014 did DUKE ENERGY PROGRESS/Progress Energy Carolinas repair or replace the skimmer on the riser in the 1978 coal ash basin.

115. The annual inspection report produced on or about June 24, 2013, by Engineering Firm #4 and submitted to DUKE ENERGY PROGRESS noted that a "trickle of flow" was observed at the outfalls leading from the risers in the 1978 and 1985 ash basins which the report concluded indicated possible leakage.

DEWATERING OF THE ASH BASINS AND REPAIR OF RISERS

116. During the summer of 2013, on a date unknown, an employee of DUKE ENERGY BUSINESS SERVICES contacted a contractor specializing in diving and underwater pipe repair and mentioned the possible need for riser repair at CAPE FEAR. The contractor was not engaged at that time and no schedule for the potential work was discussed.

117. Also during the summer of 2013, DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES were engaged in planning for the closure of the coal ash basins at CAPE FEAR. On or about July 11, 2013, consulting engineers assisting DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES in planning for ash basin closure produced and provided to DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES a "site investigation plan" that included plans for locating, inspecting, and determining the composition of risers and discharge pipes for each ash basin.

118. As part of the ongoing planning for ash basin closure, DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES sought to eliminate the need for NPDES permits for CAPE FEAR, in keeping with its "Ash Basin Closure Strategy." This strategy would reduce continuing operation and maintenance costs at the plant while ash basin closure was pending. DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES knew that in order to eliminate

the NPDES permits, the coal ash basins would have to be in a "no flow" state. To reach that state, DUKE ENERGY PROGRESS needed to eliminate the riser leaks at the 1978 and 1985 coal ash basins as well as lower the level of the contents of the ash basins to prevent water from overtopping the risers during a 25-year rain event. These requirements were discussed by a number of DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES employees during the summer of 2013, including the DUKE ENERGY BUSINESS SERVICES NPDES Subject Matter Expert and the DUKE ENERGY BUSINESS SERVICES Director of Plant Demolition and Retirement.

119. Also as part of the ongoing planning for ash basin closure at CAPE FEAR, DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES recognized that dewatering the ash basins was a necessary and time-consuming part of the process of closing an ash basin. DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES further believed that dewatering the coal ash basins would "lessen hydrostatic pressure" and "over a relatively brief time reduce and/or eliminate seepage." At the time, seepage was the subject of threatened citizen law suits, a series of state-filed civil complaints, and significant public concern.

120. DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES also believed that dewatering the 1978 and 1985 coal ash basins prior to repairing the risers would provide a safer environment

for contractors performing repair work. DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES employees knew that the leaks in the risers were likely being caused by cracks or failures in the grout between the concrete pipe sections that were underwater. The employees did not know how far underwater the leaks or grout failures were or how many sections of the pipe would need repair. Because the risers were filled with air but surrounded by water, underwater repair of the risers could be hazardous to the divers due to a phenomenon known as "differential pressure." DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES employees believed that removing the standing water from the 1978 and 1985 basins to at or below the level of the leaking portions of the risers would eliminate the risk from differential pressure.

121. Beginning on or about August 16, 2013, and continuing through on or about September 30, 2013, employees and contractors for DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES began developing a work plan for pumping water from the 1985 ash basin at CAPE FEAR.

122. On or about September 30, 2013, DUKE ENERGY PROGRESS employees began pumping water from the 1985 ash basin at CAPE FEAR, using a Godwin pump and hoses.

123. On or about October 2, 2013, two days after pumping began at the 1985 ash basin, a DUKE ENERGY BUSINESS SERVICES

engineer assigned to the plant retirement program emailed a representative of a contracting company specializing in underwater pipe repair. In the email, the engineer indicated that there were "several potential opportunities at [the] Cape Fear plant that we would like you to look at." The engineer went on to describe one of the opportunities as:

> Ash pond riser repairs. Two ponds' risers leak. There is a slow trickle out of the discharge of the concrete riser pipes at two ash ponds. We may elect to stop the leak. Could you provide a ballpark for providing the investigation and repair services? Could you also describe what the process would be?

124. On or about October 22, 2013, the underwater pipe repair contractor submitted to DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES a project estimate titled "Abandonment of Intakes and Leak Sealing" that included four tasks, including "Ash Pond Riser Repairs."

125. On or about January 13, 2014, DUKE ENERGY PROGRESS began dewatering operations at the 1978 coal ash basin at CAPE FEAR, using a Godwin pump and hoses similar to those used at the 1985 coal ash basin, as well as the same work plan.

126. On or about January 24, 2014, DUKE ENERGY PROGRESS signed a contract, through DUKE ENERGY BUSINESS SERVICES, acting as its agent, with the underwater pipe repair contractor for various projects at CAPE FEAR relating to plant decommissioning and coal ash basin closure, as addressed in the October 22,

2014, project estimate. One of the projects was repair work on the risers in the 1978 and 1985 coal ash basins. The contract specified that work under the contract would "start on or about January 27, 2014 and shall be completed no later than December 31, 2014." The contract did not identify specifically when the work would begin on the risers.

127. On or about March 11, 2014, DENR officials from both the DWR and the Division of Mineral and Land Resources visited CAPE FEAR to perform an inspection. The DENR officials were accompanied by several DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES employees during their inspection. DENR observed the Godwin pumps at the 1985 and 1978 ash basins along with obvious signs of a significant drop in the water level in the coal ash basins and disturbances in the surface of the coal ash in the basins. **(See Appendix, Photographs 8 - 10).**

128. At the conclusion of the DENR inspection on March 11, 2014, a dispute arose between DENR officials and DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES employees over whether DUKE ENERGY PROGRESS had been authorized by DENR-DWR to discharge water from the coal ash basins using Godwin pumps.

129. On or about March 19 and 20, 2014, an employee of the underwater pipe repair contractor performed video inspections of the risers in the 1978 and 1985 coal ash basins. The contractor observed that in the discharge pipe leading from the riser in

the 1985 coal ash basin, the visibility in one area was "next to nothing." The visibility was negatively impacted by turbidity and debris in the pipe. The contractor observed a "slow trickle" of water intruding into the riser in the 1978 coal ash basin. At the time of the camera inspections, the water level in both coal ash basins had already been lowered below the uppermost joints of the risers and, thus, below the level of some of the leaks.

130. No other camera inspections were conducted of the risers between 2008 and March 19, 2014.

131. On or about March 19 and 20, 2014, employees and agents of the underwater pipe repair contractor replaced and resealed the grout between the concrete pipe sections of the risers in the 1978 and 1985 coal ash basins. **(See Appendix, Photographs 11 through 14).**

132. Between at least January 1, 2012, and January 24, 2014, DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES failed to properly maintain the risers in the 1978 and 1985 coal ash basins at CAPE FEAR in violation of the applicable NPDES permit.

HISTORICAL SEEPS AND DISCHARGES FROM COAL ASH BASINS

133. DUKE ENERGY CAROLINAS' and DUKE ENERGY PROGRESS's coal ash basins are comprised of earthen dams. Over time, "seeps" developed in the dam walls. "Seeps" occur when water, often

carrying dissolved chemical constituents, moves through porous soil and emerges at the surface. Seeps are common in earthen dams. The Defendants have identified nearly 200 distinct seeps at the Defendants' coal ash basins throughout North Carolina in permit modification applications filed in 2014. Not all seeps necessarily reach waters of the United States. However, some of the discharge from seeps is collected and moved through engineered drains or channels to waters of the United States. Other seeps are simply allowed to flow across land surfaces to waters of the United States. Each of the facilities listed in the table at paragraph 12 had seeps of some form.

134. Water from seeps may transport pollutants. Wastewater sampled from various seep locations at DUKE ENERGY CAROLINAS and DUKE ENERGY PROGRESS coal ash basins in 2014 was found to contain constituents including aluminum, arsenic, barium, boron, chloride, chromium, copper, fluoride, lead, manganese, nickel, selenium, thallium, and zinc, and was additionally found to be acidic.

135. On June 7, 2010, EPA issued interim guidance to assist NPDES permitting authorities with establishing appropriate permit requirements for wastewater discharges from coal ash basins at power plants. In the guidance, EPA advised with respect to point source discharges of seepage:

> If the seepage is directly discharged to waters of the United States, it is likely discharged via a discrete conveyance and thus is a point source discharge. Seepage discharges are expected to be relatively minor in volume compared to other discharges at the facility and could be inadvertently overlooked by permitting authorities. Although little data are available, seepage consists of [coal combustion residuals] including fly ash and bottom ash and fly ash transport water and [flue-gas desulfurization] wastewater. If seepage is discharged directly via a point source to a water of the U.S., the discharge must be addressed under the NPDES permit for the facility.

136. Since at least 2010, seepage from DUKE ENERGY CAROLINAS' and DUKE ENERGY PROGRESS's coal ash basins at certain of their 14 coal-fired power plants in North Carolina entered waters of the United States through discrete conveyances.

137. Wetlands may also suffer impacts from the operation of coal-fired plants. Coal ash basins were historically sited near rivers and are, therefore, often located in or near riparian wetlands and some coal ash basins have hydrologic connections to wetlands via groundwater or seeps.

138. Since 2010, as part of the NPDES permitting process in North Carolina, coal-fired plants are required to monitor groundwater to assure natural resources are protected in accordance with federal and state water quality standards. Monitoring of groundwater at coal ash basins owned by DUKE ENERGY CAROLINAS and DUKE ENERGY PROGRESS has shown exceedances of groundwater water quality standards for pollutants under and near the basins including arsenic, boron, cadmium, chromium,

iron, manganese, nickel, nitrate, selenium, sulfate, thallium, and total dissolved solids.

139. At various times between 2010 and 2014 the Defendants included general references to seeps in correspondence and permit applications with DENR and disclosed more detailed information concerning certain seeps, including engineered seeps (i.e., man-made channels). The Defendants did not begin gathering and providing detailed, specific, and comprehensive data concerning seeps, and particularly seeps discharging to waters of the United States, at each of the North Carolina coal ash basins to DENR until after the DAN RIVER spill in 2014.

140. After the coal ash spill at DAN RIVER in 2014, DUKE ENERGY CAROLINAS and DUKE ENERGY PROGRESS, with the assistance of DUKE ENERGY BUSINESS SERVICES, filed NPDES permit renewal and/or modification applications seeking authorization for certain seeps that discharged, via a point source, directly to a water of the United States. These applications are currently pending as DENR considers the impacts of the seeps and discharges on the receiving waters of the United States.

H.F. LEE STEAM ELECTRIC PLANT

141. DUKE ENERGY PROGRESS owns the H. F. Lee Steam Electric Plant ("LEE"), which is located in Goldsboro, North Carolina. LEE (formerly known as the "Goldsboro Plant") began operation

shortly after World War II and added additional coal-fired combustion units in 1952 and 1962. The plant retired the coal-fired units in September of 2012.

142. LEE used several coal ash basins in the past. Only one of the remaining coal ash basins still contains water and ash sluiced from LEE (the "active coal ash basin"). The active ash basin sits on the north side of the Neuse River. **(See Appendix, Photograph 15).**

143. The active coal ash basin is triangle-shaped and includes a primary basin and a small secondary settling basin. The treatment system is designed so that water discharges from the primary basin into the secondary basin and from the secondary basin into the Neuse River.

144. The NPDES permit No. NC0003417 for LEE, effective November 1, 2009, authorized two discharges into the Neuse River – one from the active coal ash basin ("Outfall 001") and one from the cooling water pond ("Outfall 002"). A 2010 modification of the 2009 permit also authorized a third outfall ("Outfall 003") from a combined cycle generation facility. Water does not currently discharge from the active coal ash basin into the Neuse River via Outfall 001.

145. Beginning at a time unknown but no later than October 2010, DUKE ENERGY PROGRESS/Progress Energy Carolinas identified a seep on the eastern embankment of the active coal ash basin.

This seep was adjacent to an area of seepage that was identified and repaired in 2009 and 2010. This seep in 2010 collected and flowed to a "flowing ditch" outside of the active coal ash basin. This seep was repaired in May of 2011.

146. Additional seeps on the eastern side of the active coal ash basin also flowed into the same drainage ditch as the seep identified in October 2010. The drainage ditch discharged into the Neuse River at latitude 35.379183, longitude -78.067533. The drainage ditch was not an authorized outfall under the NPDES permit. In 2014, DUKE ENERGY PROGRESS identified the GPS coordinates of four seeps on the eastern side of the coal ash basin as: latitude 35.380510, longitude -78.068532; latitude 35.382767, longitude -78.069655; latitude 35.386968, longitude -78.071942; and latitude 35.379492, longitude -78.067718.

147. On February 20, 2013, DENR personnel sampled water in three locations from the drainage ditch. This sampling occurred after DENR personnel from the Land Quality Section observed a seep near the southeast corner of the ash pond dike. The seep collected in the unpermitted discharge ditch and flowed into the Neuse River. Water quality analysis of samples from the drainage ditch showed exceedances of state water quality standards for chloride, arsenic, boron, barium, iron, and manganese. This discharge of wastewater into the Neuse River

from the drainage ditch at LEE was not authorized under the NPDES permit.

148. On March 11, 2014, DENR personnel again sampled wastewater from the drainage ditch referenced previously. The ditch showed exceedances for iron and manganese.

149. Unpermitted discharges, in violation of the applicable NPDES permit, occurred at LEE from at least October 1, 2010, through December 30, 2014.

RIVERBEND STEAM STATION

150. DUKE ENERGY CAROLINAS owns and operates the Riverbend Steam Station ("RIVERBEND"), located in Gaston County, North Carolina, approximately 10 miles from the city of Charlotte and immediately adjacent to Mountain Island Lake, on a bend in the Catawba River. Mountain Island Lake is the primary source of drinking water for residents of Gaston and Mecklenburg Counties.

151. RIVERBEND began commercial operation in 1929 and its combustion units were retired in April 2013, with plans to demolish it after 2016. It has two unlined coal ash basins along Mountain Island Lake, with dams reaching up to 80 feet in height. The RIVERBEND dams are designated in a 2009 EPA Dam Safety Assessment as "Significant Hazard Potential," as previously defined. RIVERBEND contains approximately 2,730,000 million tons of stored coal ash.

152. The RIVERBEND NPDES permit, No. NC0004961, was issued on March 3, 1976, and has been renewed subsequently, with the current NPDES Permit expiring on February 28, 2015. The RIVERBEND NPDES permit allows the facility to discharge wastewater to the Catawba River from three "permitted outfalls" in accordance with the effluent limitations and monitoring requirements regarding flow, suspended solids, oil and grease, fecal coliform, copper, iron, arsenic, selenium, mercury, phosphorus, nitrogen, pH, and chronic toxicity, as well as other conditions set forth therein. Wastewater from the coal ash basin was to be discharged, after treatment by settling, through one of the monitored and permitted outfalls.

153. On December 4 through December 6, 2012, DENR conducted inspections of RIVERBEND and discovered unpermitted discharges of wastewater from the coal ash basin into the Catawba River. Among the unpermitted discharges at RIVERBEND is a seep identified in a 2014 permit modification application as Seep 12, an engineered drain to discharge coal ash contaminated wastewater into the river. RIVERBEND Seep 12 is located at latitude 35.36796809, longitude -80.95935079. **(See Appendix, Photographs 16 through 18)**. At some time unknown, but prior to December 2012, one or more individuals at RIVERBEND created the unpermitted channel that allowed contaminated water from the coal ash basin to be discharged into the river.

154. The unpermitted seep resulted in documented unpermitted discharges from 2011 through 2013 containing elevated levels of arsenic, chromium, cobalt, boron, barium, nickel, strontium, sulfate, iron, manganese, and zinc into the Catawba River.

155. Unpermitted discharges, in violation of the applicable NPDES permit, occurred at RIVERBEND from at least November 8, 2012, through December 30, 2014.

ASHEVILLE STEAM ELECTRIC GENERATING PLANT

156. DUKE ENERGY PROGRESS owns and operates the Asheville Steam Electric Generating Plant ("ASHEVILLE"), in Buncombe County, North Carolina.

157. ASHEVILLE is a coal-powered electricity-generating facility in the Western District of North Carolina. It has two unlined coal ash basins, one constructed in 1964 and the other constructed in 1982. The basins, each approximately 45 acres in size, hold a total of approximately 3,000,000 tons of coal ash waste. **(See Appendix, Photograph 19).** The basins were each characterized in the 2009 EPA Dam Safety Assessment as "High Hazard Potential," meaning that "failure or mis-operation results will probably cause loss of human life."

158. The ASHEVILLE NPDES permit, number NC0000396, was issued in 2005 and expired in 2010. Progress Energy Carolinas (now DUKE ENERGY PROGRESS) filed a timely permit renewal

application on June 11, 2010. DENR has not yet issued a new permit and ASHEVILLE continues to operate under the terms of the 2005 NPDES permit.

159. On May 13, 2011, DUKE ENERGY PROGRESS/Progress Energy Carolinas sought authority to relocate the settling basin and permitted discharge outfall at ASHEVILLE from its original location near the 1964 coal ash basin to a location approximately 3,000 feet away, latitude 35.47367 and longitude -82.504, in order to allow "stabilization work" on the 1964 ash pond impoundment.

160. On March 11, 2013, DENR staff inspected ASHEVILLE and identified seeps flowing from toe drains at the 1964 coal ash basins. The engineered seep from the 1964 coal ash basin has continued to discharge pollutants. This engineered seep is not authorized under the applicable NPDES permit. Engineered seeps from the 1964 coal ash basin are located at latitude 35.468319, longitude -82.549104 and latitude 35.466943, longitude -82.548502. These engineered seeps discharge through the toe drain to the French Broad River.

161. Unpermitted discharges, in violation of the applicable NPDES permit, occurred at ASHEVILLE from at least May 31, 2011, through December 30, 2014.

BROMIDE IMPACTS FROM FGD SYSTEMS

162. As described above, DUKE ENERGY CAROLINAS owns and operates Belews Creek Steam Station ("BELEWS") in Stokes County, North Carolina, and Cliffside Steam Station ("CLIFFSIDE") in Rutherford and Cleveland Counties, North Carolina.

163. As part of its efforts to comply with the Clean Air Act and North Carolina Clean Smokestacks Act, DUKE ENERGY CAROLINAS installed Flue Gas Desulfurization ("FGD") "scrubbers" to significantly reduce or eliminate certain air pollutants, such as sulfur dioxide and nitrogen oxide at several coal-fired facilities. FGD scrubbers isolate certain pollutants from coal combustion emissions into the air and ultimately divert those pollutants, including bromides, into a gypsum slurry that is eventually routed to the facility's coal ash basins. At times, portions of the slurry may be diverted for reuse in products such as wall board.

164. FGD installation was completed and the scrubbers at BELEWS became fully operational at the end of 2008.

165. When bromide comes into contact with chlorine-based water treatment systems, it can contribute to the formation of compounds known as trihalomethanes ("THMs"). There are no general federal or state water limits for the discharge of bromides to surface water. However, there are state and federal limits for total trihalomethanes ("total THMs") under the Safe

Drinking Water Act. If ingested in excess of the regulatory limits over many years, THMs may cause adverse health effects, including cancer.

DISCHARGE OF BROMIDES AT BELEWS

166. Beginning in 2008 or 2009, the City of Eden ("Eden"), downstream from BELEWS, noted an increase in total THMs in its drinking water.

167. Prior to the installation of the FGD scrubbers, DUKE ENERGY CAROLINAS reported to DENR in its BELEWS NPDES permit applications that bromide occurred in its waste stream at a level too low to detect. When BELEWS applied for a NPDES permit modification in 2009, it made no new disclosures concerning bromide levels because the modification did not relate to bromide and there were no federal or state limitations for bromide discharge.

168. DUKE ENERGY CAROLINAS tested for bromides, as well a number of other potential pollutants, at BELEWS in 2008-2009 to evaluate the effects of the FGD wastewater treatment system. Those test results showed that bromides were discharged from BELEWS into the Dan River. This did not violate the NDPES permit for the facility.

169. In consultation with an outside contractor, in January 2011, Eden determined that an increase in bromides contributed

to the increase in total THMs it had witnessed beginning in 2008-2009.

170. In early 2011, Eden tested the water entering its water treatment facility from the Dan River and performed water tests upstream to determine the source of the bromides.

171. On May 10, 2011, Eden notified DUKE ENERGY CAROLINAS that it was having difficulty with increasing levels of total THMs in its treated drinking water and requested DUKE ENERGY CAROLINAS' bromide sampling data from the outflow of BELEWS. An impending reduction in the threshold for total THMs (required by an EPA rule promulgated under the Safe Drinking Water Act) triggered Eden's particular interest in the pollutant, especially given that Eden was at the upper limit of the then-permissible total THM range.

172. As a result of the water testing, Eden identified the source of the increased bromides as BELEWS, which discharges into the Dan River. Eden shared this information and its test results with DUKE ENERGY CAROLINAS on June 7, 2011.

173. Shortly thereafter, DUKE ENERGY CAROLINAS and DUKE ENERGY BUSINESS SERVICES internally agreed that the increased bromides very likely came from BELEWS and, combined with a number of other factors, had likely caused the THM increase at Eden. DUKE ENERGY CAROLINAS and DUKE ENERGY BUSINESS SERVICES

also agreed internally that the increased bromides were likely the result of the FGD scrubber system.

174. In mid-June 2011, DUKE ENERGY CAROLINAS contacted the Town of Madison ("Madison"), which also draws water from the Dan River and processes that water for drinking and which is closer to BELEWS than Eden. DUKE ENERGY CAROLINAS informed Madison of its findings and Madison asked to be part of the discussions with Eden about reducing bromide levels. DUKE ENERGY CAROLINAS and DUKE ENERGY BUSINESS SERVICES employees met with Eden and Madison several times between June 2011 and April 2012 to discuss reducing total THMs in their drinking water.

175. DUKE ENERGY CAROLINAS informed DENR of the increase in bromide levels in its effluent when it filed its NPDES permit renewal application for BELEWS on August 29, 2011. In the application, DUKE ENERGY CAROLINAS listed bromide as a pollutant present in outfalls 001 (into Belews Lake) and 003 (into Dan River). The largest concentration of bromide was listed as 6.9 mg/L from Outfall 003, which translates to 6.9 parts per million (ppm) or 6907 parts per billion (ppb). This bromide result appears to have been taken from a sample of water collected in January 2011 and analyzed after Eden had brought the issue to DUKE ENERGY CAROLINAS' attention.

176. At the time DUKE ENERGY CAROLINAS filed its NPDES permit renewal application for BELEWS, none of the previous permits had placed any restrictions or limits on bromides.

177. In mid-October 2011, Eden informed DUKE ENERGY CAROLINAS that Madison had violated its limit on total THMs. DUKE ENERGY CAROLINAS was also informed that Henry County, Virginia, (which purchases Eden's water) violated its total THM limit. Dan River Water (another purchaser of Eden's water) also violated its total THM limit.

178. On November 16, 2011, DENR's Winston-Salem Regional Office held a meeting with DUKE ENERGY CAROLINAS, DUKE ENERGY BUSINESS SERVICES, Eden, and Madison regarding the bromide issue. All participants agreed that the total THM problem was caused by bromides entering the Dan River from BELEWS. DUKE ENERGY CAROLINAS was not aware of the relationship between bromides and THMs until Eden brought the matter to DUKE ENERGY CAROLINAS' attention in 2011.

179. Since the November 2011 meeting, DUKE ENERGY CAROLINAS has entered into written agreements with Eden and Madison to assist them with a portion of the costs of modifying and modernizing their water treatment systems.

DISCHARGE OF BROMIDES AT CLIFFSIDE

180. Beginning at about the time DUKE ENERGY CAROLINAS responded to Eden's initial complaints regarding the bromide

discharge at BELEWS, DUKE ENERGY CAROLINAS conducted an initiative to monitor bromide discharge at other locations employing FGD scrubbers.

181. As a result of this initiative, in or about early August 2011, DUKE ENERGY CAROLINAS also internally identified the CLIFFSIDE facility in western North Carolina as one that could pose a potential THM problem in light of the relatively shallow river (the Broad River) into which CLIFFSIDE discharged and the presence of relatively close downstream facilities that drew drinking water from the Broad River.

182. The last CLIFFSIDE NPDES permit was issued in January 2011 and did not reference bromide.

183. DUKE ENERGY CAROLINAS AND DUKE ENERGY BUSINESS SERVICES informed neither downstream communities nor DENR regarding this discharge from CLIFFSIDE. As of the date of this joint factual statement, the parties are not aware of a community downstream from CLIFFSIDE that has reported elevated levels of total THMs due to an increase in bromide discharge from the facility, but acknowledge the possibility that one or more communities may have been affected.

184. In 2013, DUKE ENERGY CAROLINAS installed a spray dry absorber for one of the two FGD scrubber units at the CLIFFSIDE facility which reduced the bromide discharge from CLIFFSIDE.

The other FGD scrubber unit at CLIFFSIDE operates only intermittently.

SUTTON FACILITY

185. DUKE ENERGY PROGRESS owns and operates the L.V. Sutton Steam Station ("SUTTON") in New Hanover County, North Carolina. SUTTON houses two coal ash basins, one constructed in 1971 and one constructed in 1984.

186. Located near SUTTON is the community of Flemington. Flemington's water supply has a history of water-quality problems. In 1978, an adjacent landfill, designated as a "Superfund" site, contaminated Flemington's drinking water and caused authorities to construct new wells.

187. Flemington's new wells are located near SUTTON's coal ash basins. They are located down-gradient from the SUTTON coal ash basins, meaning groundwater ultimately flows from the coal ash basins toward the Flemington wells.

188. DUKE ENERGY PROGRESS/Progress Energy Carolinas has monitored groundwater around SUTTON since 1990. Monitoring particularly focused on a boron plume emanating from the coal ash ponds.

189. From at least 2010 through 2013, the groundwater monitoring wells at SUTTON reported unnaturally elevated levels of some constituents, including manganese, boron, sulfate, and total dissolved solids.

190. Flemington's public utility also tested its water quality. Those tests showed exceedances of barium, manganese, sodium, and sulfate in 2013.

191. In June and July 2013, Flemington's public utility concluded that boron from SUTTON's ash ponds was entering its water supply. Tests of water from various wells at and near SUTTON from that period showed elevated levels of boron, iron, manganese, thallium, selenium, cadmium, and total dissolved solids.

192. In October 2013, DUKE ENERGY PROGRESS entered into an agreement with the Cape Fear Public Utility Authority to share costs for extending a municipal water line to the Flemington community.

(SPACE LEFT BLANK INTENTIONALLY)

SO AGREED, THIS 20th DAY OF FEBRUARY, 2015.

THOMAS G. WALKER
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Eastern District of North Carolina
North Carolina

JOHN C. CRUDEN
Assistant Attorney General
Department of Justice
Environment and Natural
Resources Division

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ON BEHALF OF EACH PROSECUTING OFFICE:

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STEVEN R. KAUFMAN
Assistant U.S. Attorney
Criminal Division
U.S. Attorney's Office - WDNC

SO AGREED, this the 20 day of February, 2015.

DUKE ENERGY CAROLINAS, LLC.
Defendant

BY: _____
JULIA S. JANSON
Executive Vice-President,
Chief Legal Officer, and
Corporate Secretary

Authorized Designated Official for
Duke Energy Carolinas, LLC

_____
JAMES P. COONEY, III
Womble Carlyle Sandridge & Rice LLP
Counsel for the Defendant

SO AGREED, this the 20 day of February, 2015.

DUKE ENERGY PROGRESS, INC.
Defendant

BY: _____
JULIA S. JANSON
Executive Vice-President,
Chief Legal Officer, and
Corporate Secretary

Authorized Designated Official for
Duke Energy Progress, Inc.

_____
JAMES P. COONEY, III
Womble Carlyle Sandridge & Rice LLP
Counsel for the Defendant

SO AGREED, this the 20 day of February, 2015.

DUKE ENERGY BUSINESS SERVICES, INC.
Defendant

BY: _____
JULIA S. JANSON
President and Chief Legal Officer

Authorized Designated Official for
Duke Energy Business Services, LLC

_____
JAMES P. COONEY, III
Womble Carlyle Sandridge & Rice LLP
Counsel for the Defendant

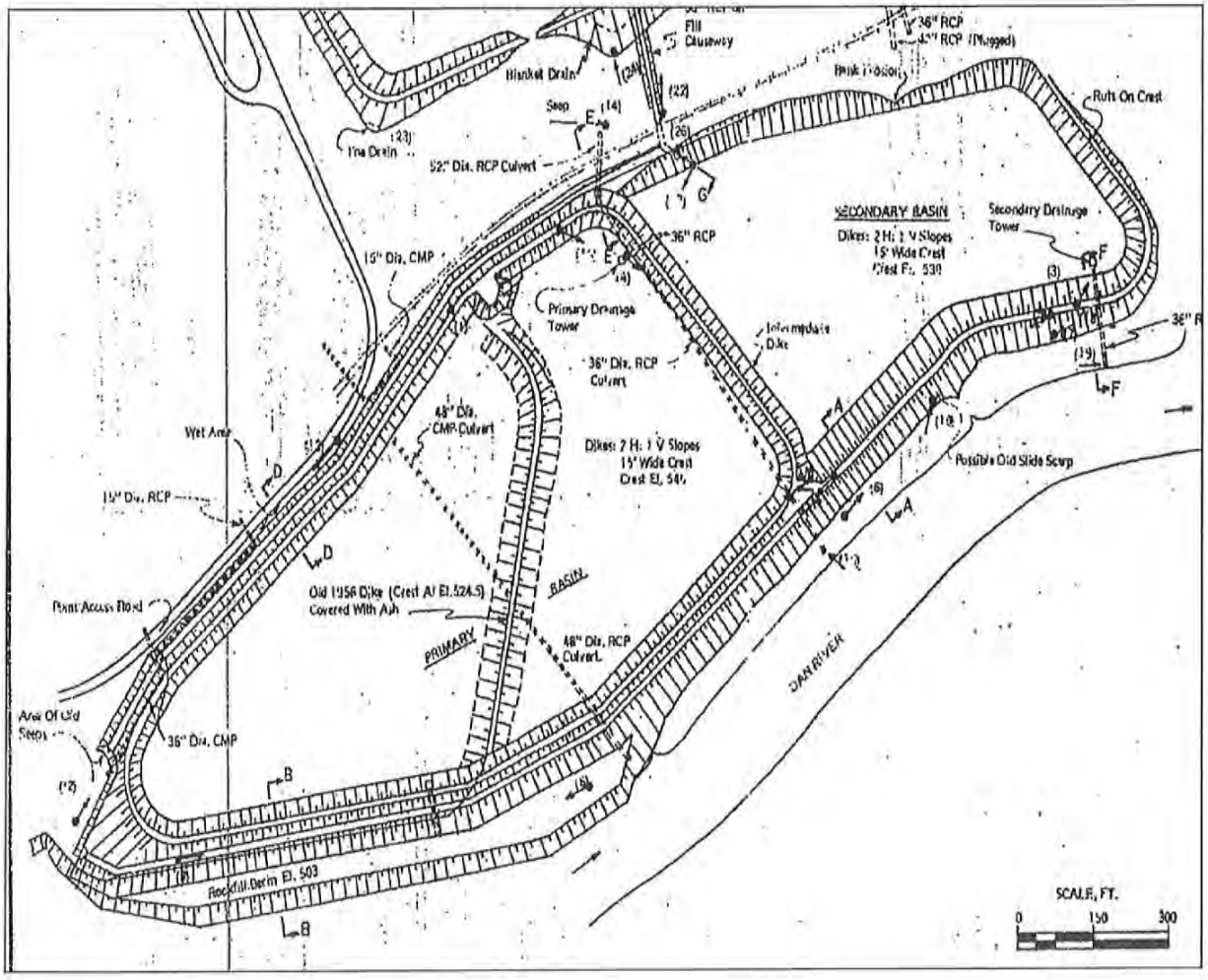
United States v. Duke Energy Business Services LLC, et al.

APPENDIX

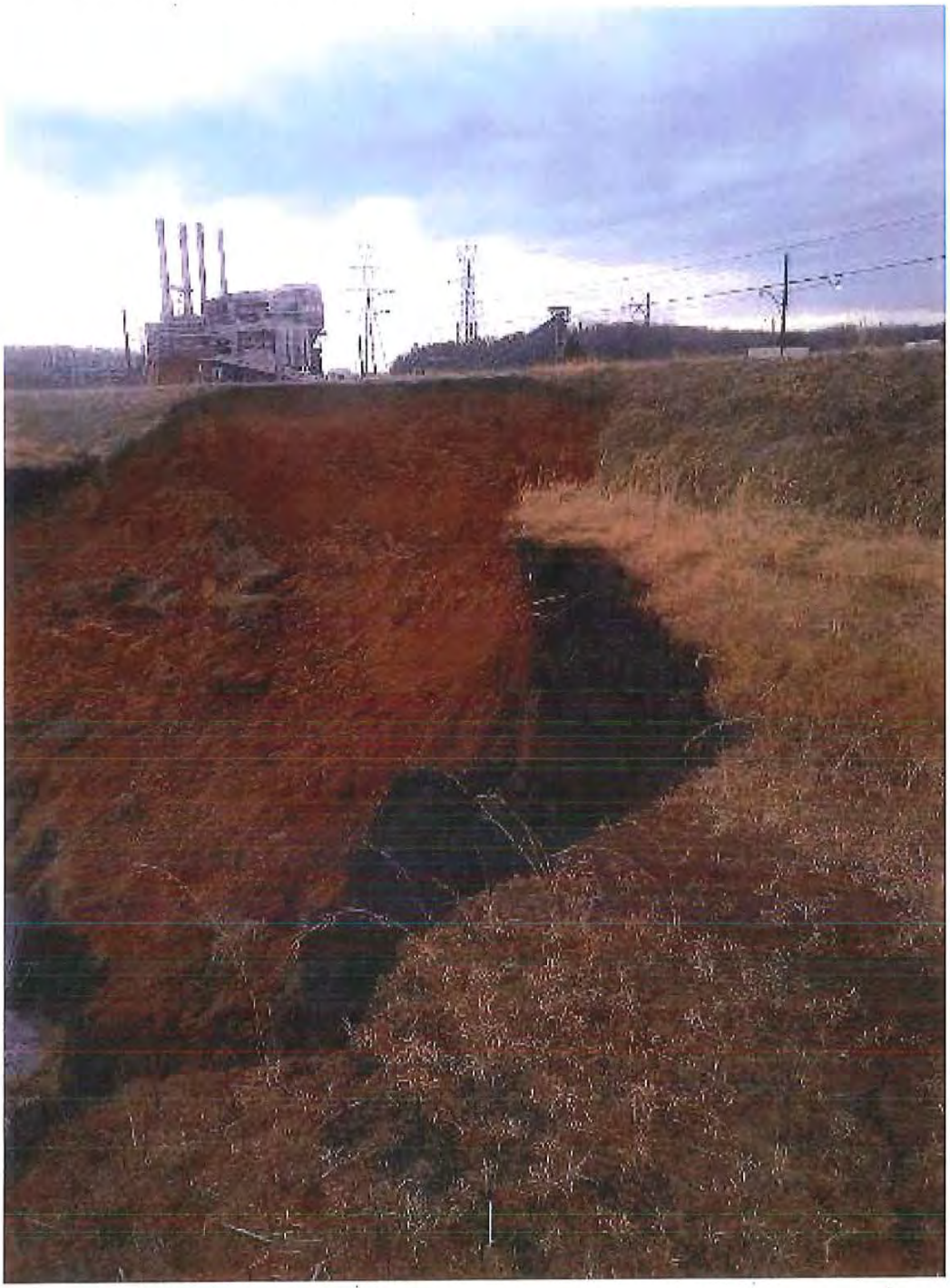
TO JOINT FACTUAL STATEMENT

February 20, 2015

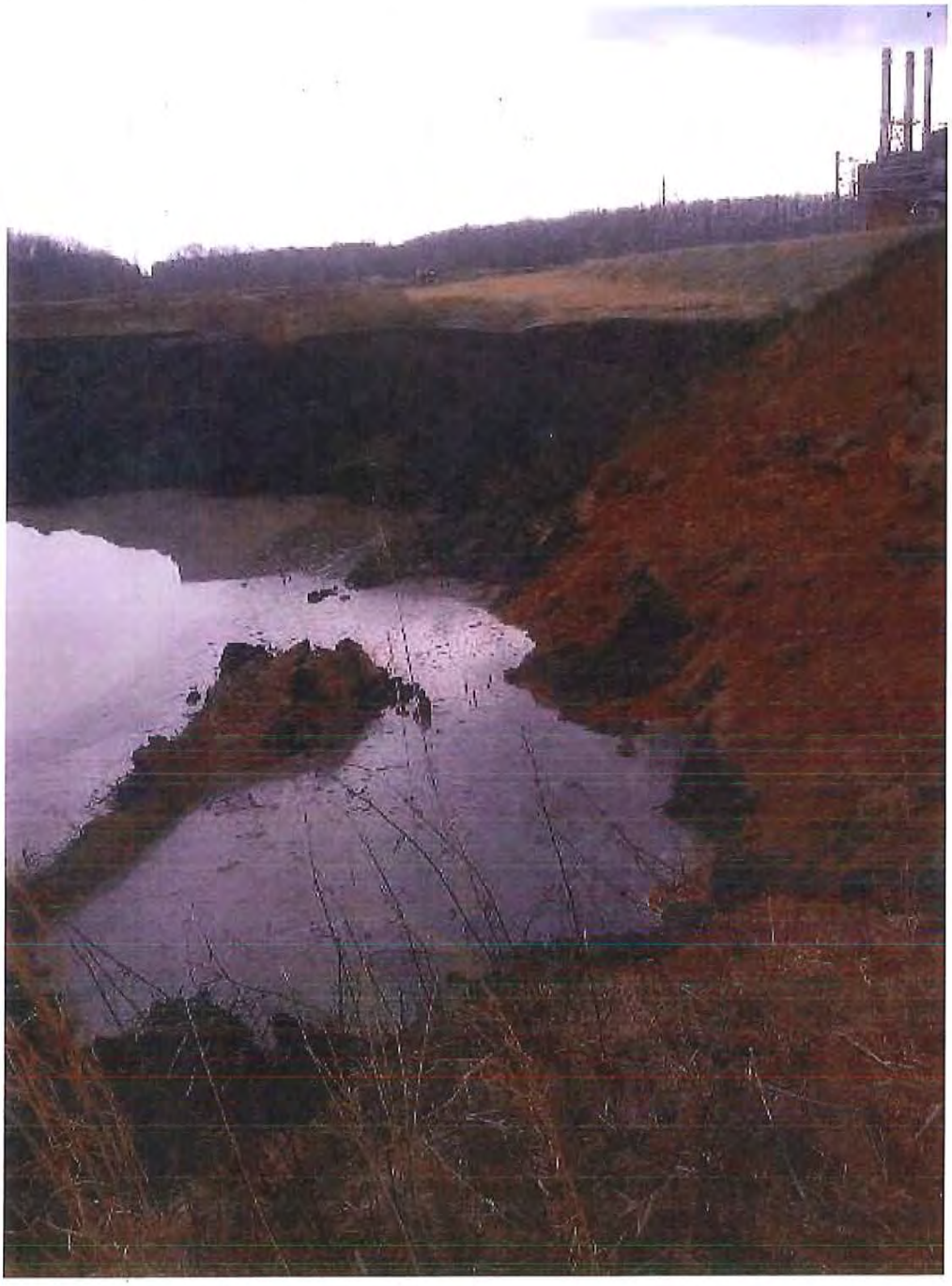
Diagram 1. Engineering Firm #1, Report of Safety Inspection – Duke Power Dan River Steam Station Ash Dikes, at Fig. 4 (1981).



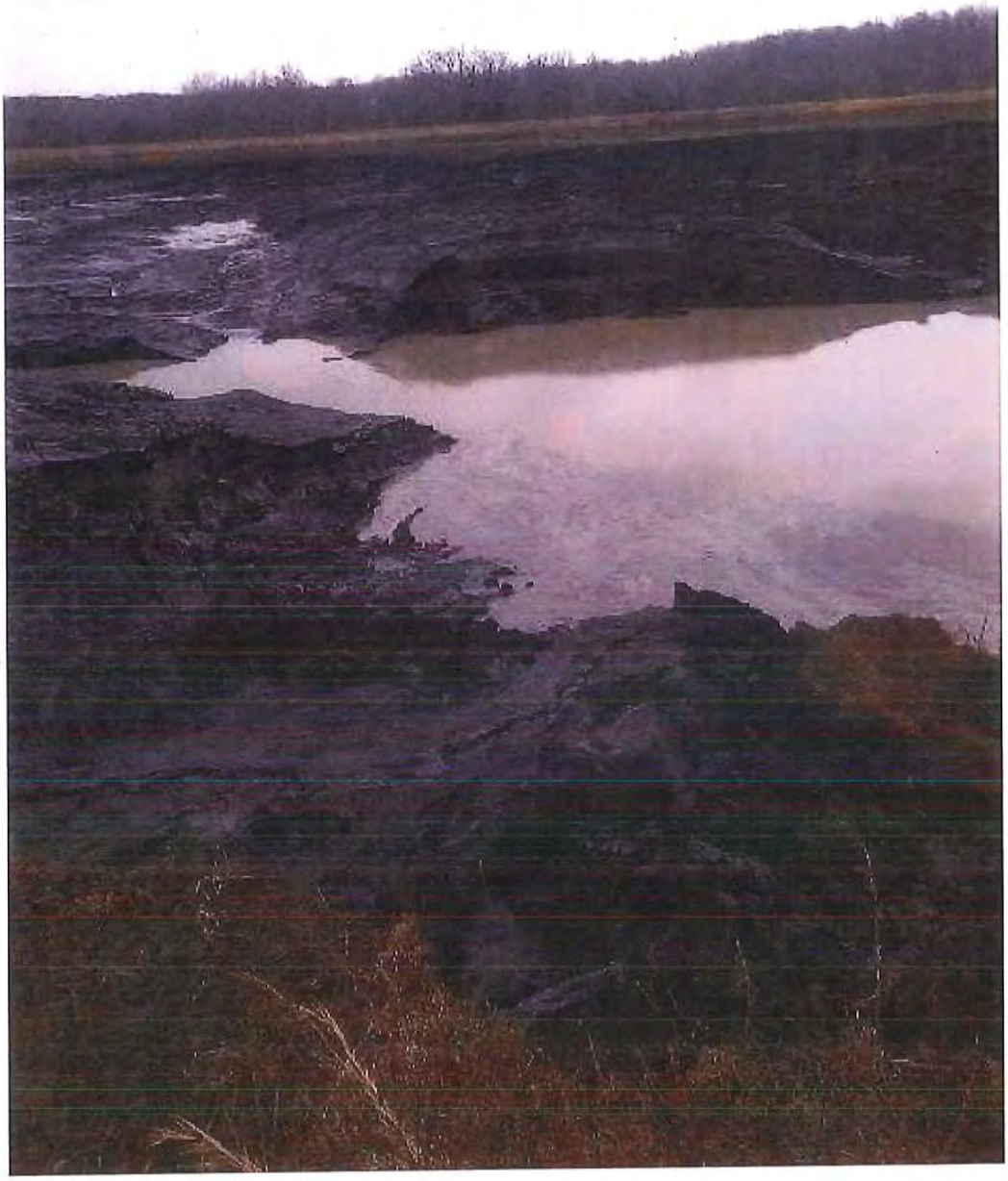
Photograph 1. Photograph of DAN RIVER coal ash basin during spill, attached to 2/2/2014, 3:49 p.m. e-mail from Duke Energy Business Services employee.



Photograph 2. Photograph of DAN RIVER coal ash basin during spill, attached to 2/2/2014, 3:49 p.m. e-mail from Duke Energy Business Services employee.



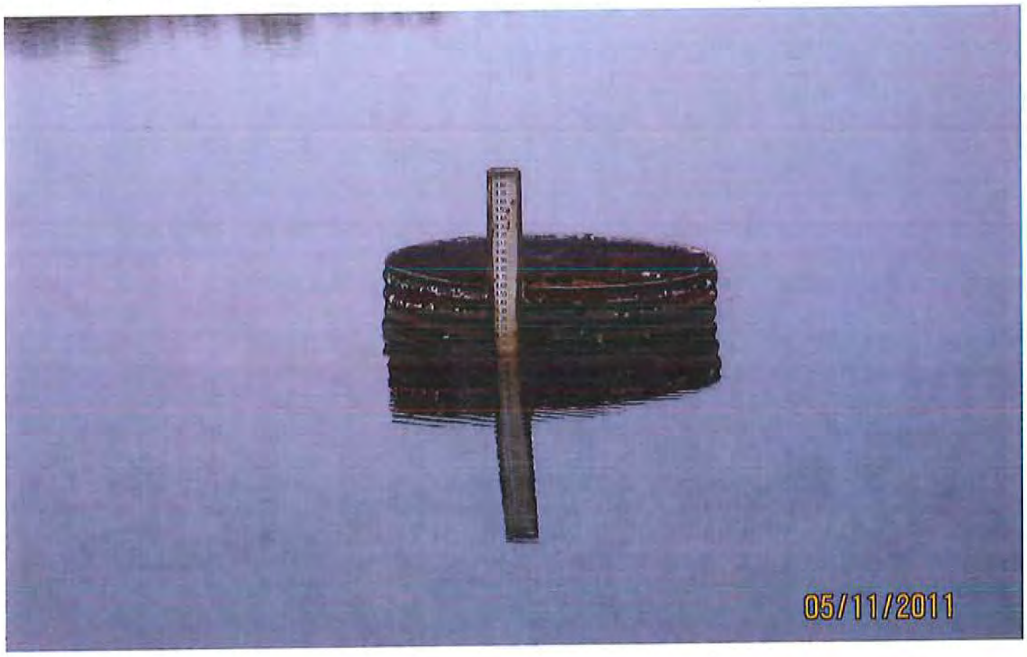
Photograph 3. Photograph of DAN RIVER coal ash basin during spill, attached to 2/2/2014, 3:49 p.m. e-mail from Duke Energy Business Services employee.



Photograph 4. Photograph of DAN RIVER coal ash basin during spill, attached to 2/2/2014, 3:49 p.m. e-mail from Duke Energy Business Services employee.

Photograph 5. Riser in CAPE FEAR 1978 coal ash basin from 2012 Five Year Independent Consultant Report.

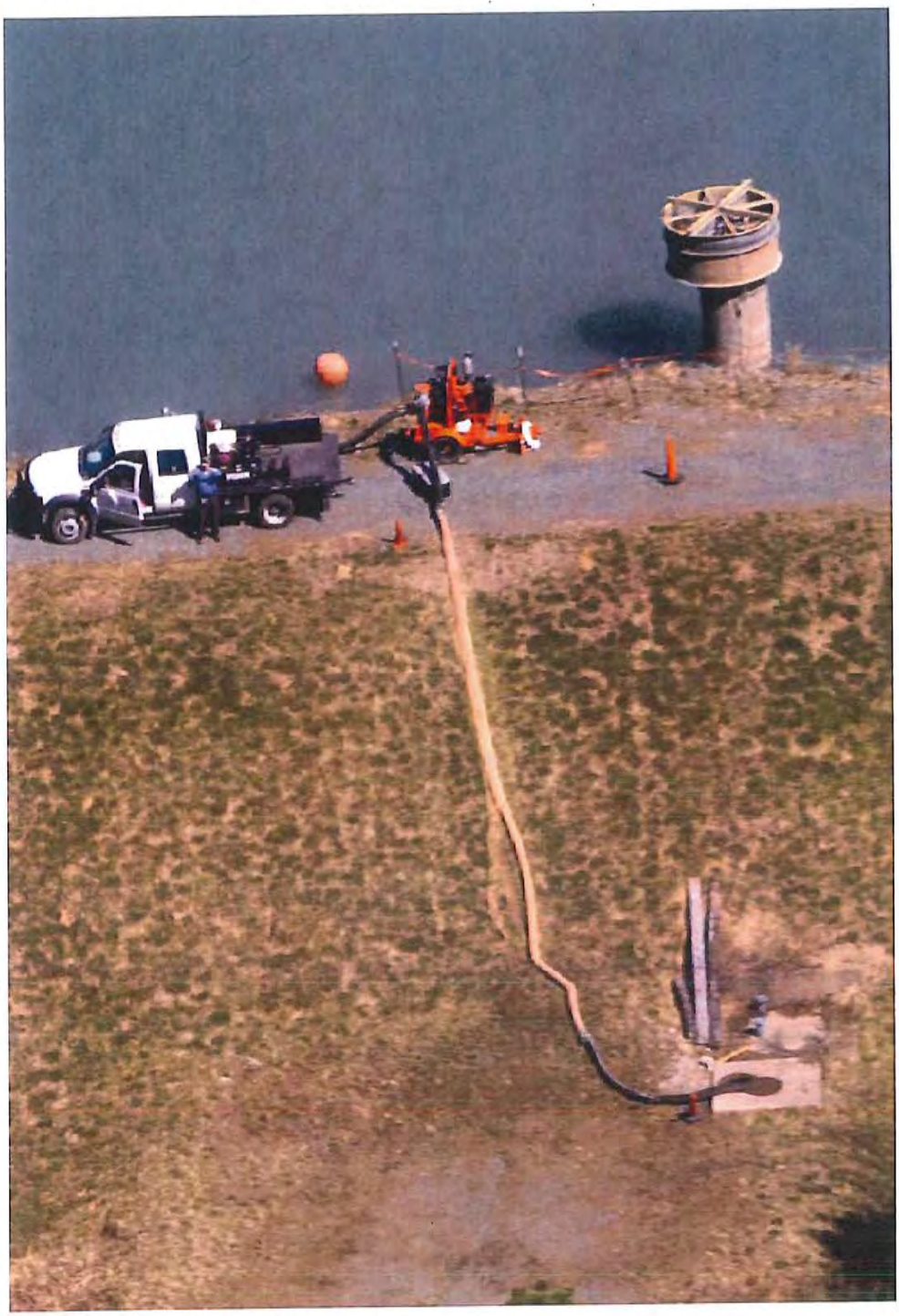
Photograph 6. Riser in CAPE FEAR 1978 coal ash basin from 2012 Five Year Independent Consultant Report.



Photograph 7. Riser in CAPE FEAR 1985 coal ash basin from 2012 Five Year Independent Consultant Report.

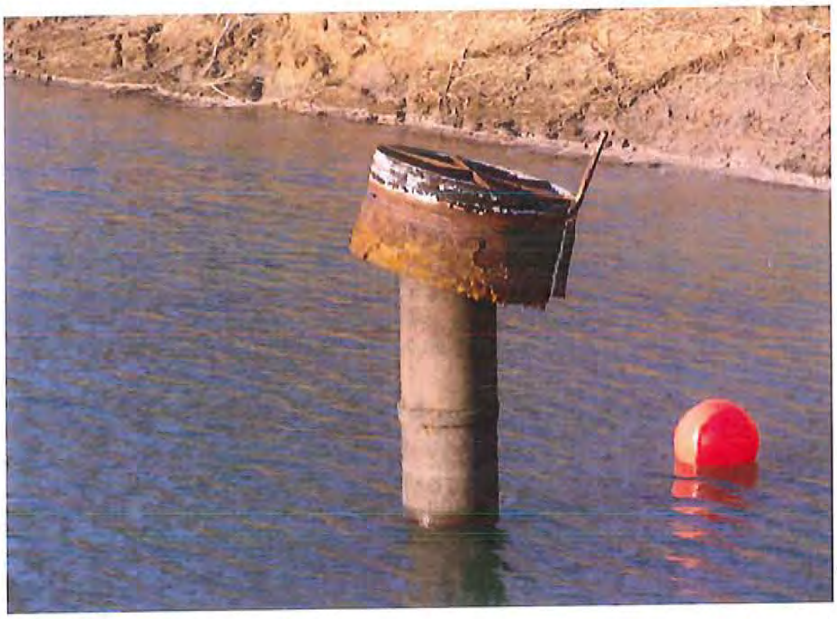
Photograph 8. 3/11/14 aerial photograph of CAPE FEAR 1978 coal ash basin with Godwin pump and truck.

Photograph 9. 3/11/14 aerial photograph of CAPE FEAR 1985 coal ash basin with Godwin pump and truck.



Photograph 10. 3/11/14 aerial photograph of CAPE FEAR 1985 coal ash basin with Godwin pump and truck.

Photograph 11. 3/19/14 photograph of CAPE FEAR 1978 coal ash basin riser, prior to repair work.



Photograph 12. 3/19/14 photograph of CAPE FEAR 1985 coal ash basin riser, prior to repair work.

Photograph 13. 3/19/14 photograph of old grout on CAPE FEAR coal ash basin riser.

Photograph 14. 3/19/14 photograph of new grout on CAPE FEAR coal ash basin riser.

Photograph 15. Aerial Photograph of LEE from 2011 EPA Dam Safety Assessment report.

Photograph 16. Aerial photograph depicting location of RIVERBEND Seep 12.

Photograph 17. Photograph of RIVERBEND Seep 12.

Photograph 18. Photograph of RIVERBEND Seep 12.

Photograph 19. Aerial photograph of ASHEVILLE.

STATE OF NORTH CAROLINA
COUNTY OF WAKE

IN THE GENERAL COURT OF JUSTICE
SUPERIOR COURT DIVISION
13-CVS-11032

STATE OF NORTH CAROLINA ex rel. NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES,
Plaintiff,

v.

WATERKEEPER ALLIANCE, SOUND RIVERS, WINYAH RIVERS FOUNDATION, and CAPE FEAR RIVER WATCH, INC.,
Plaintiff-Intervenors,

v.

DUKE ENERGY PROGRESS, LLC,
Defendant.

FILED
2017 JUN -9 AM 11:18
WAKE CO., C.S.C.
BY _____

AMENDED ORDER GRANTING MOTION FOR PARTIAL SUMMARY JUDGMENT

THIS CAUSE came on before the Hon. Paul Ridgeway, Superior Court Judge presiding pursuant to designation under Rule 2.1 of the General Rules of Practice, on Motion of the Defendant, DUKE ENERGY PROGRESS, LLC ("Defendant" or "Duke Energy Progress") for Partial Summary Judgment. Following the filing of the Motion for Partial Summary Judgment, the Plaintiff-Intervenors joined in the Motion. The Plaintiff Department of Environmental Quality, Division of Water Resources, opposed the Motion for Partial Summary Judgment. A hearing was conducted on September 14, 2015. After reviewing the Motion, the Responses, the materials attached, the arguments of counsel, and the pleadings in this matter, this Court is of the opinion that the Motion for Partial Summary Judgment should be GRANTED. At the request of the Court, a further

hearing was held on February 12, 2016, to discuss the scope and conditions of an Order granting the Motion for Partial Summary Judgment, the Court having previously requested proposed orders and briefing. After considering the positions of all parties in this matter, and after argument of counsel, this Court now GRANTS the Motion for Partial Summary Judgment as set forth in this Order.

Findings of Undisputed Fact and Conclusions of Law

1. This is a civil enforcement action brought by the State of North Carolina and joined in by Plaintiff-Intervenors against the Defendant for injunctive relief. The Plaintiff and Plaintiff-Intervenors submitted separate Complaints which, together, seek injunctive relief under G.S. §143-215.6C for alleged violations of G.S. §§143-215.1(a)(1) and (a)(6), alleged violations of the National Pollutant Discharge Elimination System ("NPDES") permits, alleged violations of the groundwater standards established (at the time of the Complaint) by 15A N.C. Admin. Code Subchapter 2L ("2L Groundwater Rules"), and, in the case of Plaintiff-Intervenors' Complaints, alleged violations of various provisions of the Clean Water Act, 33 U.S.C. §§1311(a), 1342(a), and 1365(f) as set forth in those Complaints.

2. As to the plants that are the subject of this Motion (H.F. Lee Steam Station ("H.F. Lee"), Cape Fear Steam Station ("Cape Fear"), and Weatherspoon Steam Station ("Weatherspoon")), the State of North Carolina sought the identical injunctive relief as set forth in the Complaint: (1) abatement of the violations of G.S. § 143-215.1, the NPDES permits and Rule 2L Groundwater Rules, (2) assessment of the ash basins and specifically assessment of whether exceedances in groundwater constituents beyond

the compliance boundary were naturally occurring or a result of the coal ash basins, and (3) corrective action to restore groundwater quality.

3. As to these same plants, the various Plaintiff-Intervenors requested separate relief from the State of North Carolina, but relief that was substantively identical across Plaintiff-Intervenors Complaints in Intervention for each of the facilities. The Plaintiff-Intervenors sought injunctive relief under the 2L Groundwater Rules for exceedances of any constituents that were not naturally occurring and were caused by the coal ash basins, sought an assessment of those exceedances as specified in the 2L Groundwater Rules, sought implementation of any corrective actions required by the 2L Groundwater Rules, asked that the Defendant conduct sampling and testing of seeps for purposes of characterizing their constituents, and requested abatement of alleged unpermitted discharges from the coal ash basins under the Clean Water Act and the coordinate provisions of North Carolina law.

4. On August 20, 2014, the General Assembly ratified Session Law 2014-122, which includes the Coal Ash Management Act of 2014, portions of which are codified as Part 2I of Article 9 of Chapter 130A of the General Statutes (collectively "CAMA 2014"); this was permitted to become law by the Governor without signature on September 20, 2014. On June 15, 2015, the General Assembly enacted the Mountain Energy Act of 2015, which was ratified as Session Law 2015-110 and which became effective on June 24, 2015 ("2015 Mountain Energy Act"), which, among other things, amended CAMA 2014. As used herein, "CAMA" shall refer to CAMA 2014, as amended by the 2015 Mountain Energy Act.

5. CAMA amended and enacted a number of North Carolina Statutes relevant to the relief sought by the State of North Carolina and the Plaintiff-Intervenors.

a. G.S. §130A-309.210 was enacted to prohibit the construction of new coal combustion residuals surface impoundments[1] or the expansion of such existing impoundments after October 1, 2014;

b. G.S. § 130A-309.213 was enacted to require that DEQ establish a classification (high-risk, intermediate-risk, or low-risk), and schedule for closure and required remediation for all coal combustion residuals surface impoundments in North Carolina. G.S. § 130A-309.213 requires that DEQ provide for public notice and comment, and hold public hearings on such proposed classifications. DEQ must then submit proposed classifications to the Coal Ash Management Commission ("CAMC") for approval. Parties aggrieved by a final decision of CAMC may appeal that decision pursuant to Article 3 of Chapter 150B of the General Statutes. G.S. § 130A-309.214 of CAMA establishes minimum requirements applicable to the high, intermediate, and low-

[1] CAMA enacts G.S. §130A-309.201 to define a "coal combustion residuals surface impoundment" as a "topographic depression, excavation or diked area that is (i) primarily formed from earthen materials; (ii) without a base liner approved for use by Article 9 of Chapter 130A of the General Statutes or rules adopted thereunder for a combustion products landfill or coal combustion residuals landfill, industrial landfill, or municipal solid waste landfill; and (iii) designed to hold accumulated coal combustion residuals in the form of liquid wastes, wastes containing free liquids, or sludges, and that is not backfilled or otherwise covered during period of deposition. 'Coal combustion residuals surface impoundment' shall only include impoundments owned by a public utility, as defined in G.S. 62-3. 'Coal combustion residuals surface impoundment' includes all of the following: (a) An impoundment that is dry due to the deposited liquid having evaporated, volatilized, or leached. (b) An impoundment that is wet with exposed liquid. (c) Lagoons, ponds, aeration pits, settling ponds, tailing ponds, and sludge pits, when these structures are designed to hold accumulated coal combustion residuals. (d) A coal combustion residuals surface impoundment that has been covered with soil or other material after the final deposition of coal combustion residuals at the impoundment."

risk impoundments, and establishes outside dates for closure of such impoundments: December 31, 2019 for high-risk impoundments; December 31, 2024 for intermediate-risk impoundments, and December 31, 2029 for low-risk impoundments. The coal combustion residuals surface impoundments at the H.F. Lee, Cape Fear and Weatherspoon are required to be closed in conformity with the requirements of CAMA and the provisions of this Order;

c. CAMA enacted G.S. §130A-309.211 to require the assessment and, where appropriate, corrective action as to groundwater impacted by the coal ash basins at the facilities operated by the Defendant by, among other things, requiring: (1) the preparation and implementation of an approved Groundwater Assessment Plan, (2) the preparation and submission of a Groundwater Assessment Report, and (3) the preparation and implementation of any necessary Groundwater Corrective Action Plan which provides for the restoration of groundwater quality. In addition, N.C.G.S. § 143-215.1(k) was amended to eliminate the distinction between disposal systems that were permitted after 30 December 1983 and those permitted prior to that date. This provision of CAMA was recently held to have rendered moot this Court's declaratory ruling that the 2L Groundwater Rules required immediate action to eliminate the source or sources of groundwater contamination, as requested by the Plaintiff-Intervenors under those rules. The Supreme Court held that that case "has been rendered moot as a matter of both law and fact by virtue of the enactment of the revised version of N.C.G.S. § 143-215.1(k)," *Cape Fear River Watch, et al. v. N.C. Envtl. Mgmt. Comm'n*, 368 N.C. 92, 100, 772 S.E.2d 445, 450 (2015), which "eliminates the distinction between facilities that were permitted before 30 December 1983 and facilities that were permitted after that

date by providing that all permitted facilities, 'without regard to the date that the system was first permitted,' are subject to the corrective action requirements of Rule .0106(d)." Id., 368 N.C. at 98, 772 S.E.2d at 449. The Environmental Management Commission has initiated the process of adopting conforming amendments into the 2L Groundwater Rules.

d. CAMA enacted G.S. § 130A-309.212 to require the identification and assessment of all discharges from CCR impoundments, the implementation of corrective action to prevent unpermitted discharges from CCR impoundments, and preparation of a plan for the identification of new discharges.

e. CAMA enacted G.S. § 130A-309.214 to require the submission of Closure Plans which must include provisions for completion of activities to restore groundwater in conformance with the requirements of the 2L Groundwater Rules. The due date for these Closure Plans will depend on the prioritization classification established under CAMA for each facility. See G.S. § 130A-309.214.

6. The Defendant has submitted groundwater assessment plans for each of the three facilities addressed in this Order. DEQ conditionally approved the plans, requiring that certain changes be addressed in the groundwater assessment reports. The Defendant has now submitted the groundwater assessment reports to DEQ, and they are currently under review.

7. In addition, during 2014, new NPDES permit applications were submitted to DEQ for the coal ash basins at these plants. As part of this process, the Defendant has submitted analyses of all seeps associated with the coal ash basins that the Defendant has identified, sampled and tested the seeps, and provided a

characterization of the chemicals found in the seeps (as sought by the relief requested by the Plaintiff-Intervenors).

8. The Defendant, in preparation for and as required by the CAMA process, conducted engineering and scientific analyses of H.F. Lee, Cape Fear and Weatherspoon and concluded that the coal combustion residuals surface impoundments at these plants should be dewatered, excavated and their contents removed to appropriate lined storage facilities or reused beneficially, as described with greater specificity below. The Defendant publicly announced these findings and conclusions on June 23, 2015. The Defendant will be seeking necessary DEQ review of the closure plans and the permits from DEQ needed to implement them.

9. As a result of these actions and statutory changes requiring further action, the Court finds that an Order on relief as to these facilities is appropriate, and the actions already taken together with those required by this Order (including dewatering, excavating and removing the contents of the coal ash basins) have remedied, or will remedy, the violations alleged in the Complaints.

10. This Court further finds that the issues alleged in the various Complaints with regard to unpermitted discharges, and with regard to violations of NPDES permits and groundwater standards at these facilities will be remedied by compliance with the provisions of this Order and the provisions of CAMA applicable to the three plants included in this Order. This Order does not resolve any issue with regard to: (1) any claims that may be pursued by DEQ pursuant to a joint enforcement agreement between DEQ and the United States Environmental Protection Agency, (2) any seeps

that are determined to be waters of the United States, or (3) whether any seeps can be addressed through NPDES permitting.

Order on Relief

11. This Court has jurisdiction over the subject matter and the parties to these actions pursuant to G.S. 7A-245 and 143-215.6C. DEQ brought the Action based on its reasonable cause to believe that Duke Energy Progress had violated or might violate provisions of G.S. 143-215.1 and the 2L Groundwater Rules.

12. Venue is proper in Wake County under G.S. 1-79 and 143-215.6C.

Specific Facility Terms

H.F. Lee Steam Station

13. Duke Energy Progress owns the H.F. Lee Steam Station, located in Wayne County, which has been retired, in that it is no longer used for the production of electricity.

14. H.F. Lee has four coal ash settling Impoundments, which are referred to in **Exhibit A** as the Active Basin, Inactive Basin 1, Inactive Basin 2, and Inactive Basin 3. Collectively, the Active Basin, Inactive Basin 1, Inactive Basin 2, and Inactive Basin 3 are referred to as "H.F. Lee Impoundments." The Active Basin no longer receives sluice water, which was water that was used to transport to the H.F. Lee Impoundments the coal ash produced when the H.F. Lee Steam Station was generating electricity. Coal ash is also stored in the Former Ash Disposal Area ("H.F. Lee Inactive Ash Area") as further identified on **Exhibit A**.

15. The H.F. Lee Impoundments are Coal Combustion Residual ("CCR") Surface Impoundments as defined in G.S. 130A-309.201(6). Upon evaluation by DEQ and full adjudication of any challenges to DEQ's evaluation, to the extent provided by

applicable law, the Inactive Ash Area may or may not be determined to be a CCR Surface Impoundment as defined in G.S. 130A-309.201(6).

16. H.F. Lee holds NPDES Permit No. NC0003417 ("Lee NPDES Permit") that authorizes and regulates discharges from permitted outfalls.

17. Duke Energy Progress shall comply with the following requirements:

a. Excavate and remove all CCR and Coal Combustion Products from the H.F. Lee Impoundments and the Inactive Ash Area (collectively, "H.F. Lee Removed Ash") to lined locations for disposal in a CCR landfill, industrial landfill, or municipal solid waste landfill or for use as structural fill or other beneficial use pursuant to applicable law, and thereafter stabilize and close the area where the H.F. Lee Impoundments and Inactive Ash Area are located pursuant to applicable law. Excavation shall include all coal ash, and such additional soil as is necessary for the protection of groundwater or as may be ordered by any regulatory agency or applicable law.

b. Defendant shall ensure that the H.F. Lee Removed Ash transferred for disposal is transferred to a lined CCR landfill, industrial landfill, or municipal solid waste landfill meeting applicable permitting, siting, construction, and engineering requirements established by applicable law, statute or regulation. The Defendant shall take all necessary steps to ensure that the disposal or reuse of H.F. Lee Removed Ash shall meet the requirements specified in **Exhibit B**, and Defendant will ensure any application for a permit submitted to DEQ shall comply with the requirements specified in Exhibit B. **DEQ neither endorses nor objects to the inclusion of Exhibit B in this Order.** DEQ shall review, and approve or deny any application for a permit for the disposal of H.F. Lee Removed Ash in accordance with applicable State statutes and

regulations. If H.F. Lee Removed Ash is used as structural fill or in another beneficial use, such as lined mine reclamation, Defendant shall ensure that it is not deposited on the surface or subsurface of the land except in a lined facility and that any application for a permit for such use submitted to DEQ shall meet the requirements set forth in **Exhibit B**. DEQ shall review, and approve or deny any application for a permit for the use of H.F. Lee Removed Ash as structural fill or other beneficial use in accordance with applicable State statutes and regulations.

c. During the removal process, sample the H.F. Lee Removed Ash in accordance with the protocol attached as **Exhibit C** and such other protocols or procedures as specified by any regulatory agency.

d. Complete investigation and undertake corrective action to eliminate groundwater violations at or beyond the compliance boundary to the extent required by G.S. § 130A-309.211, the 2L Groundwater Rules, any other applicable laws and regulations, and pursuant to a Corrective Action Plan approved by DEQ in accordance with Paragraph 21.

e. Comply with the terms and conditions of the NPDES permit, and any modified or new NPDES permit issued for this facility, pending closure of the H.F. Lee Impoundments and Inactive Ash Areas.

f. Comply with and implement an approved Plan for Identification of New Discharges in accordance with G.S. § 130A-309.212(d), attached to and included as a part of any modified or new NPDES permit issued for the facility.

g. Dewater the H.F. Lee Impoundments pursuant to the terms and limitations of a NPDES permit and in compliance with G.S. § 130A-309.214 and other applicable law.

h. Remove or permanently close all pipes currently running through or beneath the Impoundments pursuant to an approved Closure Plan.

18. Duke Energy Progress shall close the Impoundments at H.F. Lee and Inactive Ash Area should it later be determined to be a CCR Surface Impoundment (after evaluation by DEQ and full adjudication of any challenges to DEQ's evaluation to the extent that such challenges are provided for by applicable law) in accordance with all applicable provisions of CAMA and the regulations that are cited therein (including the requirement for submittal of a proposed closure plan meeting the requirements of G.S. § 130A-309.214(a)(4)), as well as the additional provisions contained in this Order (including dewatering, excavating and removing the contents of the coal ash basins).

19. The H.F. Lee Impoundments and Inactive Ash Area shall be closed according to the following timetable: Within one year of receiving the required permit(s), Duke Energy Progress shall begin dewatering the Active Basin. Defendant shall begin excavation of the H.F. Lee Impoundments within three years from the start of the dewatering process that occurs following the receipt of the required permit(s), and excavation of the H.F. Lee Impoundments shall be completed within twelve years from the start of the dewatering process that occurs following the receipt of the required permit(s). Excavation of the Inactive Ash Area shall begin no later than ten years from April 4, 2016, and shall be completed no later than twelve years from April 4, 2016.

Duke Energy Progress may be required to undertake or complete these actions sooner under CAMA, as set out in paragraph 5.b. of this Order.

20. Commencing six months after the entry of this Order on April 4, 2016, and continuing every six months thereafter until one year after the removal of the Lee Removed Ash has been completed, Duke Energy Progress shall provide a written report to the Court summarizing its actions under this Order including (1) the amount of ash removed during the previous six-month period, (2) the results of all monitoring, (3) the progress of excavation, dewatering and closure, (4) all significant activities performed pursuant to this Order during the previous six-month period, and (5) the destination and/or intended use of the Lee Removed Ash. Duke Energy Progress may utilize reports to other federal or state courts or agencies to meet this reporting requirement or any portion of this reporting requirement.

21. Within the timeframes and as required by CAMA and G.S. 130A-309.211(b), Duke Energy Progress shall submit a proposed Groundwater Corrective Action Plan to DEQ for its review and approval. The Corrective Action Plan will be designed to address any groundwater contamination as required by CAMA, G.S. § 130A-309.211, the 2L Groundwater Rules, and any other applicable laws, statutes, or regulations, but, at a minimum, to prevent contaminants from the coal ash sites from violating the 2L Groundwater Rules at or beyond the compliance boundary. For purposes of clarity, the current compliance boundary is shown on the map attached as **Exhibit A.** The actual compliance boundary is under regulatory review by DEQ and may be modified in the future, such as through permit modification or the purchase by Duke Energy Progress of additional property; provided, however, that Duke Energy

Progress, for purposes of its obligation to address groundwater contamination, will treat the compliance boundary as not extending beyond the closest shoreline of rivers or lakes.

22. No later than thirty (30) days from DEQ's approval of the groundwater corrective action plans, Duke Energy Progress shall begin implementation of the plans in accordance with the plans' schedules.

23. Notwithstanding the preceding paragraph, Defendant must comply with all applicable requirements for groundwater monitoring and assessment, and corrective action to restore groundwater quality in accordance with CAMA and the 2L Groundwater Rules.

24. Following the removal of the ash, Defendant must investigate and remediate soil and groundwater impacted by the H.F. Lee Impoundments and Inactive Ash Area in conformance with the requirements of CAMA and the 2L Groundwater Rules, and as otherwise required by law. [2]

25. Within thirty (30) days of the entry of this Order on April 4, 2016, the Plaintiff-Intervenors shall have the right to sample any of the alleged unpermitted discharges. The Plaintiff-Intervenor representatives must be given access no later than five (5) days following notice and will be accompanied at all times while at the Facility for these purposes. The Plaintiff-Intervenors shall split samples with Duke Energy Progress and DEQ upon request.

[2] This Order does not address whether or under what circumstances, if any, a compliance boundary may be eliminated or the obligations of the parties upon elimination of a compliance boundary.

26. The terms of this Order define Duke Energy Progress' minimum obligations regarding closure. Any closure plan submitted by Duke Energy Progress shall not be inconsistent with this Order.

27. A decision by any agency on the closure plan for the H.F. Lee that is final under the North Carolina Administrative Procedure Act and otherwise appealable under applicable law may be challenged by Duke Energy Progress and/or any of the Plaintiff-Intervenors by filing a contested case in the Office of Administrative Hearings, but only to the extent it is inconsistent with this Order.

Cape Fear Steam Station

28. Duke Energy Progress owns the Cape Fear Steam Station, located in Chatham County, which has been retired, in that it is no longer used for the production of electricity.

29. Cape Fear has five Impoundments (the "1956 Ash Pond," "1963 Ash Pond," "1970 Ash Pond", "1978 Ash Pond" and "1985 Ash Pond"), one of which currently receives stormwater, as further set forth in **Exhibit D** (collectively, "Cape Fear Impoundments").

30. The Cape Fear Impoundments are Coal Combustion Residual ("CCR") Surface Impoundments as defined in G.S. 130A-309.201(6).

31. Cape Fear holds NPDES Permit No. NC0003433 ("Cape Fear NPDES Permit") that authorizes and regulates discharges from a single permitted outfall from the Impoundments.

32. Duke Energy Progress shall comply with the following requirements:

a. Excavate and remove all CCR and Coal Combustion Products from the Cape Fear Impoundments ("Cape Fear Removed Ash") to lined locations for

disposal in a CCR landfill, industrial landfill, or municipal solid waste landfill or for use as structural fill or other beneficial use pursuant to applicable law, and thereafter stabilize and close the area where the Cape Fear Impoundments are located pursuant to applicable law. Excavation shall include all coal ash, and such additional soil as is necessary for the protection of groundwater or as may be ordered by any regulatory agency or applicable law.

b. Defendant shall ensure that the Cape Fear Removed Ash transferred for disposal is transferred to a lined CCR landfill, industrial landfill, or municipal solid waste landfill meeting applicable permitting, siting, construction, and engineering requirements established by applicable law, statute or regulation. The Defendant shall take all necessary steps to ensure that the disposal or reuse of Cape Fear Removed Ash shall meet the requirements specified in **Exhibit B**, and Defendant will ensure any application for a permit submitted to DEQ shall comply with the requirements specified in Exhibit B. **DEQ neither endorses nor objects to the inclusion of Exhibit B in this Order**. DEQ shall review, and approve or deny any application for a permit for the disposal of Cape Fear Removed Ash in accordance with applicable State statutes and regulations. If Cape Fear Removed Ash is used as structural fill or in another beneficial use, such as lined mine reclamation, Defendant shall ensure that it is not deposited on the surface or subsurface of the land except in a lined facility and that any application for a permit for such use submitted to DEQ shall meet the requirements set forth in **Exhibit B**. DEQ shall review, and approve or deny any application for a permit for the use of Cape Fear Removed Ash as structural fill or other beneficial use in accordance with applicable State statutes and regulations.

c. During the removal process, sample the Cape Fear Removed Ash in accordance with the protocol attached as **Exhibit C** and such other protocols or procedures as specified by any regulatory agency.

d. Complete investigation and undertake reasonable corrective action to eliminate groundwater violations at or beyond the compliance boundary to the extent required by G.S. § 130A-309.211, the 2L Groundwater Rules, any other applicable laws and regulations, and pursuant to a Corrective Action Plan approved by DEQ in accordance with Paragraph 36.

e. Comply with the terms and conditions of the NPDES permit, and any modified or new NPDES permit issued for this facility, pending closure of the Cape Fear Impoundments.

f. Comply with and implement an approved Plan for Identification of New Discharges in accordance with G.S. § 130A-309.212(d), attached to and included as a part of any modified or new NPDES permit issued for the facility.

g. Dewater the Cape Fear Impoundments pursuant to the terms and limitations of a NPDES permit and in compliance with G.S. § 130A-309.214 and other applicable law.

h. Remove or permanently close all pipes currently running through or beneath the Impoundments pursuant to an approved Closure Plan.

33. Duke Energy Progress shall close the Cape Fear Impoundments in accordance with all applicable provisions of CAMA and the regulations that are cited therein, as well as the additional provisions contained in this Order (including dewatering, excavating and removing the contents of the coal ash basins).

34. The Cape Fear Impoundments shall be closed according to the following timetable: For the 1956, 1963, and 1970 Ash Ponds, Duke Energy Progress shall begin excavation within five years of receiving the required permits and shall complete excavation within ten years of receiving the required permits. For the 1978 and 1985 Ash Ponds, Duke Energy Progress shall begin dewatering within one year of receiving the required permit(s). For the 1978 and 1985 Ash Ponds, Duke Energy Progress shall begin excavation within three years from the start of the dewatering process that occurs after the receipt of the required permit(s), and shall complete excavation within ten years from the start of the dewatering process that occurs after the receipt of the required permit(s). Duke Energy Progress may be required to undertake or complete these actions sooner under CAMA, as set out in paragraph 5.b. of this Order.

35. Commencing six months after the entry of this Order on April 4, 2016, and continuing every six months thereafter until one year after the removal of the Cape Fear Removed Ash has been completed, Duke Energy Progress shall provide a written report to the Court summarizing its actions under this Order including (1) the amount of ash removed during the previous six-month period, (2) the results of all monitoring, (3) the progress of excavation, dewatering and closure, (4) all significant activities performed pursuant to this Order during the previous six-month period, and (5) the destination and/or intended use of the Cape Fear Removed Ash. Duke Energy Progress may utilize reports to other federal or state courts or agencies to meet this reporting requirement or any portion of this reporting requirement.

36. Within the timeframes and as required by CAMA and G.S. § 130A-309.211, Duke Energy Progress shall submit proposed Groundwater Corrective Action

Plan to DEQ for its review and approval. The Corrective Action Plan will be designed to address any groundwater contamination as required by CAMA, G.S. § 130A-309.211, the 2L Groundwater Rules, and any other applicable laws, statutes, or regulations, but, at a minimum, to prevent contaminants from the coal ash sites from violating the 2L rules at or beyond the compliance boundary. For purposes of clarity, the current compliance boundary is shown on the map attached as **Exhibit D.** The actual compliance boundary is under regulatory review by DEQ and may be modified in the future, such as through permit modification or the purchase by Duke Energy Progress of additional property; provided, however, that Duke Energy Progress, for purposes of its obligation to address groundwater contamination, will treat the compliance boundary as not extending beyond the closest shoreline of rivers or lakes

37. No later than thirty (30) days from DEQ's approval of the groundwater corrective action plans, Duke Energy Progress shall begin implementation of the plans in accordance with the plans' schedules.

38. Notwithstanding the preceding paragraph, Defendant must comply with all applicable requirements for groundwater monitoring and assessment, and corrective action to restore groundwater quality in accordance with CAMA and the 2L Groundwater Rules.

39. Following the removal of the ash, Defendant must investigate and remediate soil and groundwater impacted by the Cape Fear Impoundments in

conformance with the requirements of CAMA and the 2L Groundwater Rules, and as otherwise required by law. [3]

40. Within thirty (30) days of the entry of this Order on April 4, 2016, the Plaintiff-Intervenors shall have the right to sample any of the alleged unpermitted discharges. The Plaintiff-Intervenor representatives must be given access no later than five (5) days following notice and will be accompanied at all times while at the Facility for these purposes. The Plaintiff-Intervenors shall split samples with Duke Energy Progress and DEQ upon request.

41. The terms of this Order define Duke Energy Progress' minimum obligations regarding closure. Any closure plan submitted by Duke Energy Progress shall not be inconsistent with this Order.

42. A decision by any agency on the closure plan for Cape Fear that is final under the North Carolina Administrative Procedure Act and otherwise appealable under applicable law may be challenged by Duke Energy Progress and/or any of the Plaintiff-Intervenors by filing a contested case in the Office of Administrative Hearings, but only to the extent it is inconsistent with this Order.

Weatherspoon Steam Station

43. Duke Energy Progress owns the Weatherspoon Steam Station, located in Robeson County, which has been retired, in that it is no longer used for the production of electricity.

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[3] This Order does not address whether or under what circumstances, if any, a compliance boundary may be eliminated or the obligations of the parties upon elimination of a compliance boundary.

44. Weatherspoon contains one Impoundment (which contains inactive ash areas on the footprint of the regulated surface of the Impoundment) as set forth in **Exhibit E** ("Weatherspoon Impoundment").

45. The Weatherspoon Impoundment is a Coal Combustion Residual ("CCR") Surface Impoundments as defined in G.S. 130A-309.201(6).

46. Weatherspoon holds NPDES Permit No. NC0005363 ("Weatherspoon NPDES Permit") that authorizes and regulates discharges from permitted outfalls from the Impoundment.

47. Duke Energy Progress shall comply with the following requirements:

a. Excavate and remove all CCR and Coal Combustion Products from the Weatherspoon Impoundment ("Weatherspoon Removed Ash") to lined locations for disposal in a CCR landfill, industrial landfill, or municipal solid waste landfill or for use as structural fill or other beneficial use pursuant to applicable law, and thereafter stabilize and close the area where the Weatherspoon Impoundment is located pursuant to applicable law. Excavation shall include all coal ash and such additional soil as is necessary for the protection of groundwater or as may be ordered by any regulatory agency or applicable law.

b. Defendant shall ensure that the Weatherspoon Removed Ash transferred for disposal is transferred to a lined CCR landfill, industrial landfill, or municipal solid waste landfill meeting applicable permitting, siting, construction, and engineering requirements established by applicable law, statute or regulation. The Defendant shall take all necessary steps to ensure that the disposal or reuse of Weatherspoon Removed Ash shall meet the requirements specified in **Exhibit B**, and

Defendant will ensure any application for a permit submitted to DEQ shall comply with the requirements specified in Exhibit B. **DEQ neither endorses nor objects to the inclusion of Exhibit B in this Order**. DEQ shall review, and approve or deny any application for a permit for the disposal of Weatherspoon Removed Ash in accordance with applicable State statutes and regulations. If Weatherspoon Removed Ash is used as structural fill or in another beneficial use, such as lined mine reclamation, Defendant shall ensure that it is not deposited on the surface or subsurface of the land except in a lined facility and that any application for a permit for such use submitted to DEQ shall meet the requirements set forth in **Exhibit B**. DEQ shall review, and approve or deny any application for a permit for the use of Weatherspoon Removed Ash as structural fill or other beneficial use in accordance with applicable State statutes and regulations.

c. During the removal process, sample the Weatherspoon Removed Ash in accordance with the protocol attached as **Exhibit C** and such other protocols or procedures as specified by any regulatory agency.

d. Complete investigation and undertake reasonable corrective action to eliminate groundwater violations at or beyond the compliance boundary (as specified on the map attached as **Exhibit E**) to the extent required by G.S. § 130A-309.211, the 2L Groundwater Rules, any other applicable laws and regulations, and pursuant to a Corrective Action Plan approved by DEQ in accordance with Paragraph 51;

e. Comply with the terms and conditions of the NPDES permit, and any modified or new NPDES permit issued for this facility, pending closure of the Weatherspoon Impoundment.

f. Comply with and implement an approved Plan for Identification of New Discharges in accordance with G.S. § 130A-309.212(d), attached to and included as a part of any modified or new NPDES permit issued for the facility.

g. Dewater the Weatherspoon Impoundment pursuant to the terms and limitations of a NPDES permit and in compliance with G.S. § 130A-309.214 and other applicable law.

h. Remove or permanently close all pipes currently running through or beneath the Impoundments pursuant to an approved Closure Plan.

48. Duke Energy Progress shall otherwise close the Impoundment at Weatherspoon in accordance with all applicable provisions of CAMA and the regulations that are cited therein, as well as the additional provisions contained in this Order (including dewatering, excavating and removing the contents of the coal ash basins).

49. The Weatherspoon Impoundment shall be closed according to the following timetable: Duke Energy Progress shall start excavation within ten years of April 4, 2016 and shall complete excavation within twelve years of April 4, 2016. Defendant may be required to undertake or complete these actions sooner under CAMA, as set out in paragraph 5.b. of this Order.

50. Commencing six months after the entry of this Order on April 4, 2016, and continuing every six months thereafter until one year after the removal of the Weatherspoon Removed Ash has been completed, Duke Energy Progress shall provide a written report to the Court summarizing its actions under this Order including (1) the amount of ash removed during the previous six-month period, (2) the results of all monitoring, (3) the progress of excavation, dewatering and closure, (4) all significant

activities performed pursuant to this Order during the previous six-month period, and (5) the destination and/or intended use of the Weatherspoon Removed Ash. Duke Energy Progress may utilize reports to other federal or state courts or agencies to meet this reporting requirement or any portion of this reporting requirement.

51. Within the timeframes and as required by § 130A-309.211, Duke Energy Progress shall submit a proposed a Groundwater Corrective Action Plan to DEQ for its review and approval. The Groundwater Corrective Action Plan will be designed to address any groundwater contamination as required by CAMA, G.S. § 130A-309.211, the 2L Groundwater Rules, and any other applicable laws, statutes, or regulations, but, at a minimum, to prevent contaminants from the coal ash sites from violating the 2L rules at or beyond the compliance boundary. For purposes of clarity, the current compliance boundary is shown on the map attached as **Exhibit D.** The actual compliance boundary is under regulatory review by DEQ and may be modified in the future, such as through permit modification or the purchase by Duke Energy Progress of additional property; provided, however, that Duke Energy Progress, for purposes of its obligation to address groundwater contamination, will treat the compliance boundary as not extending beyond the closest shoreline of rivers or lakes.

52. No later than thirty (30) days from DEQ's approval of the Groundwater Corrective Action Plan, Duke Energy Progress shall begin implementation of the plans in accordance with the plans' schedules.

53. Notwithstanding the preceding paragraph, Defendant must comply with all applicable requirements for groundwater monitoring and assessment, and corrective

action to restore groundwater quality in accordance with CAMA and the 2L Groundwater Rules.

54. Following the removal of the ash, Defendant must investigate and remediate soil and groundwater impacted by the Weatherspoon Impoundment in conformance with the requirements of CAMA and the 2L Groundwater Rules, and as otherwise required by law. [4]

55. Within thirty (30) days of the entry of this Order on April 4, 2016, the Plaintiff-Intervenors shall have the right to sample any of the alleged unpermitted discharges. The Plaintiff-Intervenor representatives must be given access no later than five (5) days following notice and will be accompanied at all times while at the Facility for these purposes. The Plaintiff-Intervenors shall split samples with Duke Energy Progress and DEQ upon request.

56. The terms of this Order define Duke Energy Carolina's minimum obligations regarding closure. Any closure plan submitted by Duke Energy Progress shall not be inconsistent with this Order.

57. A decision by any agency on the closure plan for Weatherspoon that is final under the North Carolina Administrative Procedure Act and otherwise appealable under applicable law may be challenged by Duke Energy Progress and/or any of the Plaintiff-Intervenors by filing a contested case in the Office of Administrative Hearings, but only to the extent it is inconsistent with this Order.

Terms Applicable to All Facilities

[4] This Order does not address whether or under what circumstances, if any, a compliance boundary may be eliminated or the obligations of the parties upon elimination of a compliance boundary.

58. The Court finds that the Defendant's compliance with the terms of this Order (which include compliance with CAMA as it applies to the three facilities in this Order and additional actions which have or will be taken) will provide the relief requested by the Plaintiff and Plaintiff-Intervenors in their Complaints.

59. This Order does not purport to address all requirements in CAMA, other applicable provisions of G.S. 130A or 143 or all other applicable laws, statutes and rules. Except as set forth in this Order, Defendant's obligation to comply with all other applicable statutes and rules currently in effect or that may later be enacted or promulgated is unchanged.

60. This Order shall not affect in any way any claims that may be pursued by DEQ pursuant to a joint enforcement agreement between DEQ and the United States Environmental Agency.

61. This is solely an action for injunctive relief brought under G.S. § 143-215.6C, and does not include any assessment of civil penalties.

62. This order shall not prohibit DEQ from taking any action to enforce Defendant's compliance with future NPDES permits or any requirements of CAMA, or any other applicable laws, statutes and regulations not addressed by this Order.

63. Provisions of this Order relating specifically to the removal of coal ash shall be enforceable by contempt power of the Court.

64. It shall not be considered a violation of this Order if performance of any of the obligations set forth in this Order is delayed by causes beyond the control of the Defendant, or any entity controlled by the Defendant or their contractors, despite best efforts to fulfill the obligation. Such causes include, but are not limited to, war, civil

unrest, act of God, or act of a governmental or regulatory body delaying performance or making it impossible, including, without limitation, any appeal or decision remanding, overturning, modifying or otherwise acting (or failing to act) on a permit or similar permission or action that prevents or delays an action needed for the performance of any of the work contemplated under this Order such that it prevents or substantially interferes with its performance within the time frames specified herein. The Defendant shall bear the burden of proving by a preponderance of the evidence the existence of such circumstances. Such circumstances do not include the financial inability to complete the work, increased cost of performance, or changes in business or economic circumstances.

a. In acting on applications and issuing permits, DEQ shall act as expeditiously as practicable, and consistent with all applicable deadlines established under G.S. 130A-309.203 and other applicable law.

b. The failure of a permitting authority to issue a necessary permit in a timely fashion which prevents the Defendant from meeting the requirements in this Order must be beyond the control of the Defendant, and the Defendant must have taken all steps available to them to obtain the necessary permit, including but not limited to submitting a complete permit application, responding to requests for additional information by the permitting authority in a timely fashion, and accepting lawful permit terms and conditions after expeditiously exhausting any legal rights to appeal terms and conditions imposed by the permitting authority.

c. The requirement that the Defendant use "best efforts" (as referenced above) includes using commercially reasonable efforts to anticipate any event that

delays its obligations and to address the event in a commercially reasonable manner as it is occurring or following the event such that delay is minimized to the greatest extent possible.

d. The Defendant shall notify the Court and the Plaintiff and Plaintiff-Intervenors in writing within ten (10) days of its knowledge of the event which causes or may cause delay, describing in detail the anticipated length of the delay, the precise cause or causes of the delay, the measures taken and to be taken by the Defendant to prevent or minimize the delay, and a timetable by which those measures will be implemented. Failure to comply with the notice requirements constitutes a waiver of any defense to a failure to comply with the terms and conditions of this Order. The parties may, in advance of the actual occurrence of an event causing delay, move the Court for a determination as to whether the event will excuse the delay.

65. In the event the Defendant fails to comply in a timely manner with any provision of this Order (including the timely submission of any document or plan and the completion of any such plan), it shall pay a stipulated civil penalty to the State of North Carolina for any violation as follows:

a. $2500.00 per day for the first twelve (12) days, and

b. $7500.00 per day thereafter for each violation.

66. Stipulated civil penalty payments shall be payable monthly on or before the fifteenth day of each succeeding month.

67. Any payment under this section shall not waive Defendant's duty to meet its obligations under this Order or preclude commencement of an action to compel its compliance with the terms of the Order.

68. This Order shall remain in force and effect until all obligations and terms and payment of all required penalties have been completed or satisfied (including by incorporation into a permit). Upon completion of all obligations imposed by this Order, the Plaintiff and the Plaintiff-Intervenors shall file appropriate notice and satisfaction documents with the Court.

69. This Court will maintain continuing jurisdiction to enforce the terms and conditions of this Order, to modify this Order, and to resolve disputes arising under this Order. Absent the consent of all parties, a party may seek modification or amendment of this Order only upon a showing of a substantial change of facts and circumstances such that it would no longer be equitable to enforce the terms and conditions of this Order absent such modification or amendment.

70. The entry of this Order shall terminate all proceedings as to the facilities set forth in this Order under these actions and will resolve all civil claims for injunctive relief of the State of North Carolina alleged in these actions as to these facilities as well as all civil claims of Plaintiff-Intervenors alleged in the Complaints-in-Intervention as to these facilities. This Order shall be given full preclusive effect for purposes of *res judicata* and collateral estoppel in any other litigation for issues resolved through this Order. For clarity, the issues listed in paragraph 10 above have not been resolved by this Order. Provided, however, that nothing in this paragraph shall limit the right of any party to apply to the Court to enforce compliance with the terms and conditions of this Order.

71. The Defendant has an obligation to submit closure plans for these facilities that meet the terms and conditions of this Order for review by DEQ and the Coal Ash

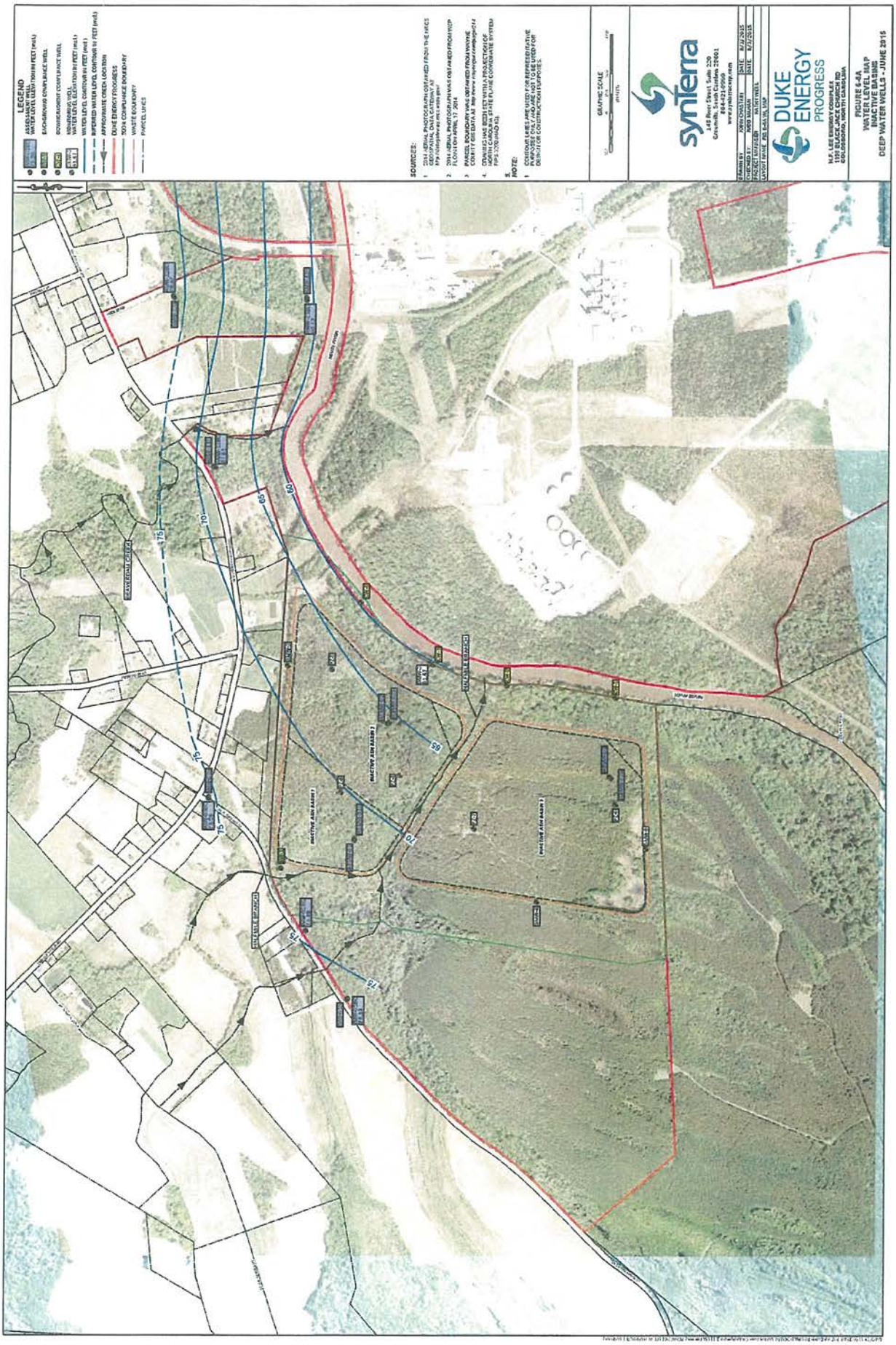
Management Commission, and to prosecute in good faith and use its best efforts to obtain approval for those plans. Should the Coal Ash Management Commission determine that excavation and movement of the ash subject to this Order at H.F. Lee, Cape Fear or Weatherspoon (or any of them) is inappropriate and order, under its statutory authority, that a different remediation plan is required, and if such a determination in the form of a final order is upheld on appeal, then this shall constitute a *force majeure* within the meaning of this Order. Upon the occurrence of this event, this Court shall conduct further proceedings and reserves the right to reinstate, as appropriate, any or all of the claims asserted by the Plaintiff and Plaintiff-Intervenors in these actions. Under those circumstances, the preclusive effects of this Order shall no longer be applicable.

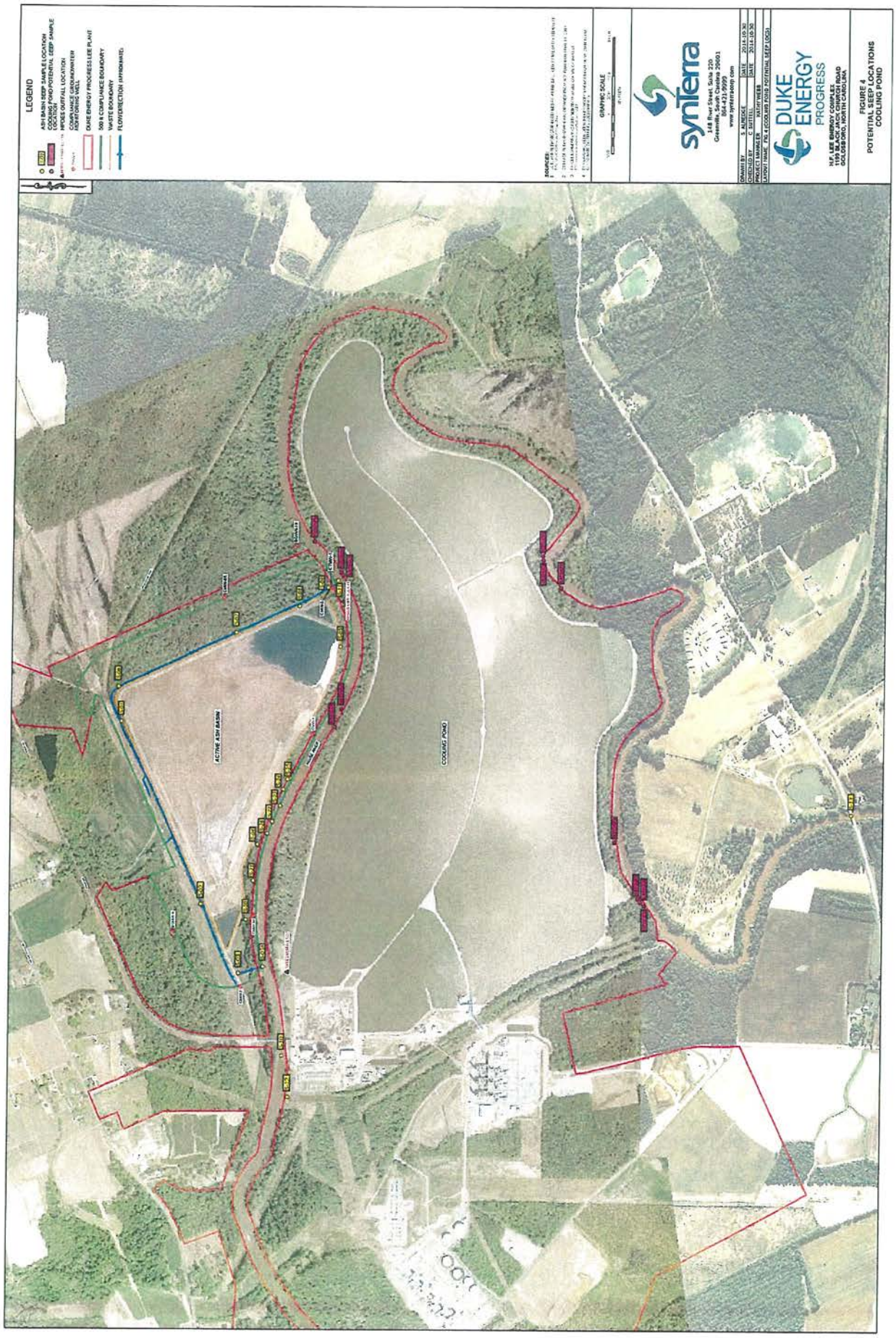
IT IS HEREBY SO ORDERED.

This 9th day of June 2016.

The Honorable Paul C. Ridgeway
Superior Court Judge

Exhibit A





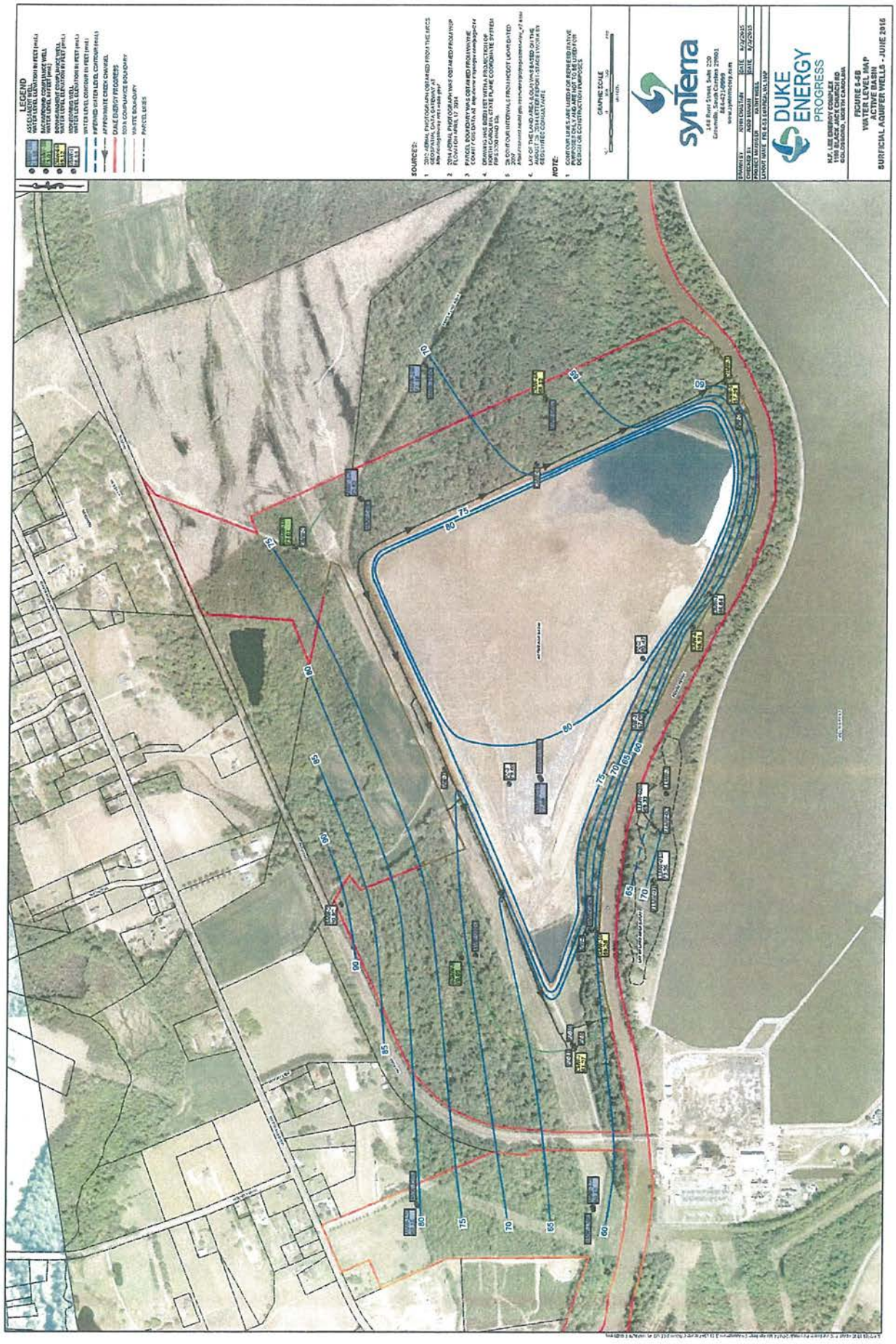


Exhibit B

Disposition of Removed Ash

The Defendant shall take all necessary steps to assure that Removed Ash shall be stored in accord with the requirements of this Exhibit.

Removed Ash under this Order will be stored in a lined landfill space meeting the requirements of G.S. 130A-309.214(a)(1)b of CAMA, including those for a Municipal Solid Waste Landfill ("MSW") meeting the requirements of 15A NCAC 13B.1600, an industrial landfill meeting the requirements of 15A NCAC 13B.0500, or a lined landfill meeting the CCR landfill liner requirements of 40 C.F.R. § 257.70(b) set forth in rules entitled "Hazardous and Solid Waste Management system: Disposal of Coal Combustion Residuals from Electric Utilities" promulgated by the United States Environmental Protection Agency ("EPA") and published on April 17, 2015, 80 Fed Reg. 21302 ("CCR rule"), and meeting all other requirements established by applicable statute, law, and regulation.

Removed Ash placed in structural fills or mine reclamations will be deposited into a properly permitted, synthetically lined facility meeting all construction, and engineering requirements of 40 CFR Part 258 (Subtitle D of RCRA) and, if disposal occurs in North Carolina, North Carolina's sanitary landfill siting and design regulation (15A NCAC 13B .0503). All structural fills shall satisfy the requirements of N.C. Gen. Stat. § 130A-309.220(b)(1) (2015).

The Defendant will not seek approval of an alternative cap under CAMA, an alternative composite liner pursuant to 40 C.F.R. § 257.70(c), a design pursuant to 40 C.F.R. § 258.40(a)(1), 15A NCAC 13B .0503(2)(d)(ii)(A), or other alternative design or liner provisions of the applicable North Carolina solid waste rules or laws, unless they have obtained prior written approval from the Conservation Group(s)[1] for that design. Approval by the Conservation Group(s) will not be unreasonably withheld. Any material that is commingled with Ash shall be disposed of in accord with applicable federal or state regulations.

Nothing in this Exhibit shall prohibit the Defendant from disposing, depositing, or processing Removed Ash through beneficial reuse including lined structural fill applications, lined mine reclamations, abrasives, filter materials, concrete, cement or such other technologies as provided for under state and federal law (including the CCR rule, as applicable). In no event shall any Removed Ash and Soil be placed in a solid waste landfill that does not meet the requirements set forth in this Exhibit, including the lining requirements set out above. If the Removed Ash and Soil is to be removed and returned at a facility to be constructed, or if it is to be removed to and stored in a structural fill site, or used for another beneficial purpose, the Removed Ash and Soil may be temporarily deposited on the surface or subsurface of the land, but shall not be permanently deposited on the surface or subsurface of the land except in a lined facility meeting all the requirements set forth in this Exhibit.

[1] The Conservation Groups shall be contacted through the Southern Environmental Law Center and are as follows: for H.F. Lee Removed Ash, Sound Rivers and Waterkeeper Alliance; for Cape Fear Removed Ash, Cape Fear River Watch and Waterkeeper Alliance; and for Weatherspoon Removed Ash, Winyah Rivers Foundation.

Exhibit C

The Removed Ash shall be analyzed using a Toxicity Characteristics Leaching Procedure ("TCLP") analysis for heavy metal parameters only (i.e., see italicized listed parameters) and shall be conducted annually on ash from each impoundment or other area from which ash is removed. Once every five years, a TCLP analysis for all parameters shall be conducted on ash from each area of Removed Ash. Any sample to undergo TCLP analysis shall be collected and preserved *in situ* (i.e., immediately upon exposure to air).

The TCLP analysis shall include the following parameters (i.e., note the leachate concentration of concern is shown in milligrams per liter in parentheses):

Arsenic (5.0)	1,4-Dichlorobenzene (7.5)	Nitrobenzene (2.0)
Barium (100.0)	1,2-Dichloroethane (0.5)	Pentachlorophenol (100.0)
Benzene (0.5)	1,1-Dichloroethylene (0.7)	Pyridine (5.0)
Cadmium (1.0)	2,4-Dinitrotoluene (0.13)	*Selenium (1.0)*
Carbon tetrachloride (0.5)	Endrin (0.02)	*Silver (5.0)*
Chlordane (0.03)	Hexachlorobenzene (0.13)	Tetrachloroethylene (0.7)
Chlorobenzene (100.0)	Heptachlor (and its hydroxide) (0.008)	Toxaphene (0.5)
Chloroform (6.0)	Hexachloro-1,3-butadiene (0.5)	Trichloroethylene (0.5)
Chromium (5.0)	Hexachloroethane (3.0)	2,4,5-Trichlorophenol (400.0)
m-Cresol (200.0)	*Lead (5.0)*	2,4,6-Trichlorophenol (2.0)
o-Cresol (200.0)	Lindane (0.4)	2,4,5-TP (Silvex) (1.0)
p-Cresol (200.0)	*Mercury (0.2)*	Vinyl chloride (0.2)
Cresol (200.0)	Methoxychlor (10.0)	Boron, Cobalt, Manganese, Thallium, Vanadium
2,4-D (10.0)	Methyl ethyl ketone (200.0)	

Additionally, Priority Pollutants not included in the TCLP analysis, plus the top 10 unidentified peaks not captured by any aforementioned test range, shall also be reported.

The ash shall also be directly tested (NOT via TCLP) for polychlorinated biphenyls (PCBs) utilizing the 209 congeners test (Method 1668).

An analysis shall be conducted on the Removed Ash from each area at a frequency that is dependent on the dry tons of ash removed or expected to be removed during the calendar year. The monitoring frequency schedule shall be as stipulated in the following table:

Amount of Product Distributed *(metric tons per 365-day period)*	**Amount of Product Distributed** *(short tons per 365-day period)*	**Monitoring Frequency**
0 < mDT/yr < 290	0 < DT/yr < 319	Once per Year
290 ≤ mDT/yr < 1,500	319 ≤ DT/yr < 1,650	Once per Quarter or Four Times per Year
1,500 ≤ mDT/yr < 15,000	1,650 ≤ DT/yr < 16,500	Once per 60 Days or

		Six Times per Year
15,000 ≤ mDT/yr	16,500 ≤ DT/yr	Once per Month or 12 Times per Year

The analysis shall include the following minimum parameters:

Arsenic	Magnesium	Potassium
Barium	Manganese	Selenium
Cadmium	Mercury	Silver
Calcium	Molybdenum	Sodium
Chromium	Nickel	Total Solids Percentage
Copper	pH	Zinc
Lead	Phosphorus	Boron, Cobalt, Manganese, Thallium, Vanadium

Laboratory analyses and/or operational data shall be performed/gathered on the ash such that it is representative and as it is to be distributed and shall be made by a laboratory certified for the required parameter(s) under 15A NCAC 2H .0800 or 15A NCAC 2H .1100.

Method 200.8 shall be used instead of anywhere Method 200.7 would have been used.

Exhibit D

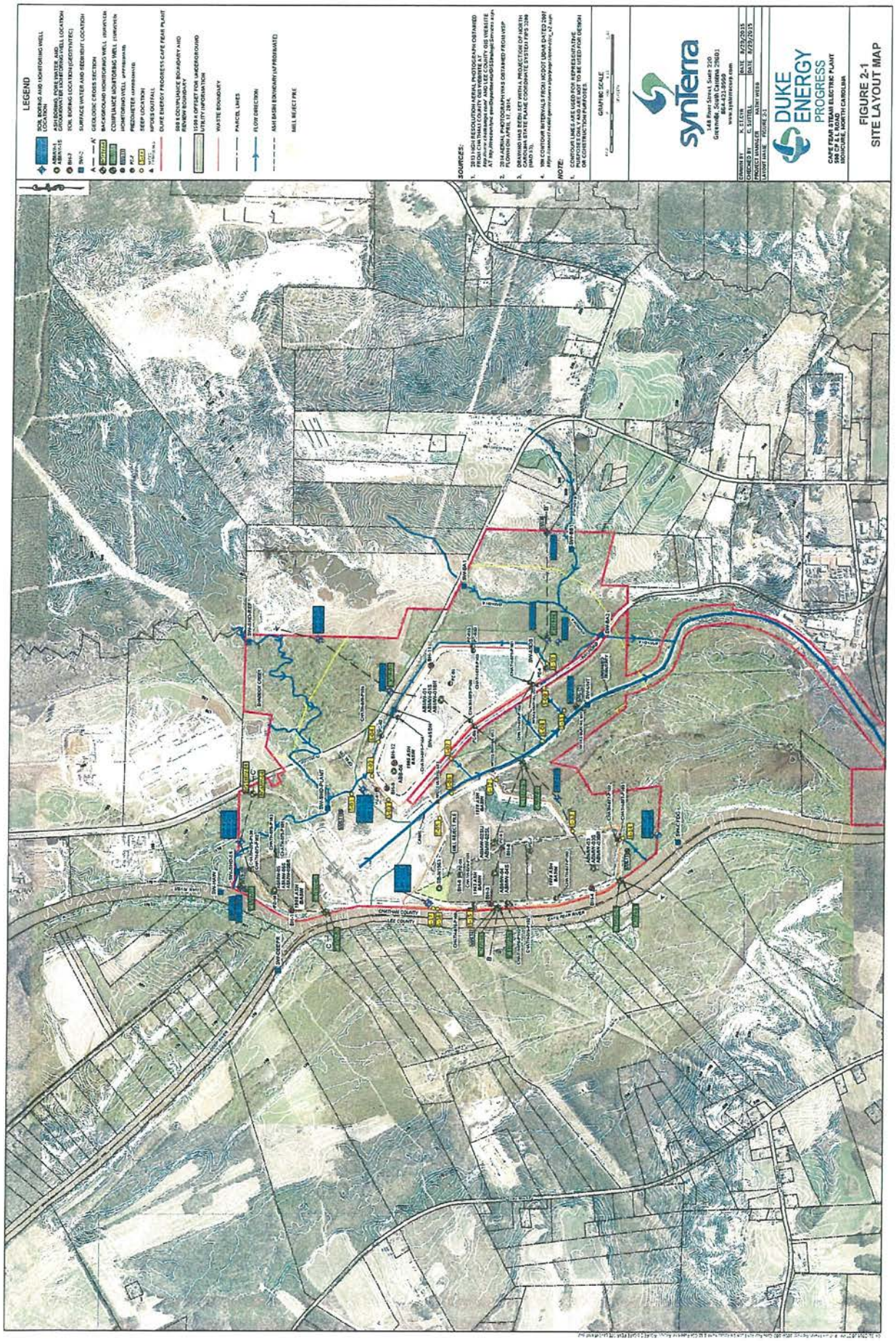


Exhibit E